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CLEAN AIR ACT AMENDMENTS OF 1983

HEARINGS

BEFORE THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

FIRST SESSION

ON

S. 768

A BILL TO AMEND THE CLEAN AIR ACT

NOVEMBER 15 AND 17, 1983

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THE CLEAN AIR ACT AMENDMENTS OF 1983

TUESDAY, NOVEMBER 15, 1983

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, D.C.

The committee met, pursuant to notice, at 10:08 a.m., in room SD-406, Dirksen Senate Office Building, Hon. Robert T. Stafford (chairman of the committee) presiding.

Present: Senators Stafford, Durenberger, Humphrey, and Burdick.

OPENING STATEMENT OF HON. ROBERT T. STAFFORD, U.S. SENATOR FROM THE STATE OF VERMONT

Senator STAFFORD. The Committee on Environment and Public Works will please come to order.

Let me welcome all our guests here this morning on this rainy day.

Today is the first of 2 days of general hearings on S. 768, the Clean Air Act Amendments of 1983. During the last Congress this committee held 30 days of hearings on Clean Air Act issues. It is not the committee's intent—I repeat that, it is not the committee's intent—to conduct an exhaustive inquiry during this Congress. The issues were examined in-depth and resolved and a bill reported by the committee last year. That bill was reintroduced as S. 768 this year. On most issues little has changed since the committee acted. It is, therefore, the committee's and the chairman's earnest desire to complete an abbreviated schedule of hearings early next year and to report a bill to the Senate by the 1st of March.

I expect there will be perhaps 3 days of hearings on acid rain issues and 2 days on other specific issues in the act. Thus, the hearings today and on Thursday will be the only occasion for taking testimony from a broad array of witnesses on a variety of issues addressed in S. 768. I am looking forward to hearing from each of our witnesses.

Senator Simpson has commitments which, regrettably, have prevented his attending the hearing this morning. He has submitted a statement which I will include at this point in the record.

[Senator Simpson's statement follows:]

STATEMENT OF HON. ALAN K. SIMPSON, U.S. SENATOR FROM THE STATE OF WYOMING

Mr. Chairman, most members of the committee agree that the Clean Air Act can be improved through legislative amendments and administrative changes within the EPA. The act has proven to be worthy legislation toward achieving and protecting an essential national resource—clean air. I believe, too, that the protection and welfare of American citizens from the hazards of air pollution can also be accomplished at lesser cost and efforts made through the instigation and continuation of certain reforms.

The Federal Government should certainly continue to be fully responsible for the establishment of primary and secondary health based standards that are the very heart of the act. Under existing law, State and local governmental entities have the option of adopting more stringent primary and secondary standards for ambient air quality. I do support this concept. During my tenure in the Wyoming State Legislature I was active in passage of laws which require sulfur dioxide emission controls that are much more strigent than the Federal standards. We must always continue to make this option available to the States.

The Clean Air Act mandates the formulation and approval of State Implementation Plans [SIPS]. This is another area that should be reviewed in order to determine methods to make State-Federal cooperation less cumbersome. We need to recognize that the individual States have a need for flexability in adapting their programs to national regulation. This committee should examine ways to decrease the lengthy review and approval time needed to process SIPS and SIP revisions so that States can go about their business of reducing pollution.

As the committee hearings progress, we need always to be vigilant in searching for opportunities to make the Clean Air Act a better piece of environmental legislation. I trust the testimony presented today might be most helpful in that regard.

Senator STAFFORD. I regret that, because of the number of witnesses and time constraints, we must adhere to a strict time limit for each presentation. In spite of that necessity, however, I expect the record we compile, both oral and written, to be of real benefit to the committee.

Having said all that, I would inquire if our first witness, Hon. Robert Abrams, attorney general of the State of New York, has been able to reach the room.

Mr. Abrams, if you are here, you are on.

I understand the problems you may have had in getting here. It took me 45 minutes to come in on a trip that usually takes about 25 minutes.

Mr. ABRAMS. Senator, it was tough getting through the acid rain.

Senator STAFFORD. I can really believe that, Mr. Attorney General.

Senator HUMPHREY. Mr. Chairman, may I get a word in here quickly?

Senator STAFFORD. You may, indeed.

Senator HUMPHREY. I came in midstream or beyond that point. Did I hear you say March?

Senator STAFFORD. Yes, I said we hope to report a bill to the Senate by the 1st of March. You will recall we do not come back in until the 23d of January.

Senator HUMPHREY. Yes.

Senator STAFFORD. And we do have a few more hearings scheduled before we get to markup, and I expect it will consume February, especially when you also consider there will be a Lincoln day break of a week in that time period.

Senator HUMPHREY. I see. I hope we can make that timetable.

Senator STAFFORD. Well, we will make every effort.

Do you have any opening statements you wish to make?

Senator HUMPHREY. No.

Senator STAFFORD. All right.

Mr. Attorney General, we apologize for the fact that in your case we are going to have to ask you to limit yourself to 10 minutes.

Your entire statement, as will those of all the witnesses this morning, will be placed in the record.

STATEMENT OF ROBERT ABRAMS, ATTORNEY GENERAL, STATE OF NEW YORK

Mr. ABRAMS. Thank you very much, Senator. I appreciate this opportunity to speak. A much more complete statement will be submitted to you for the record.

I am accompanied today by two assistant attorneys general on my staff who have worked on air matters. To my left is Assistant Attorney General Mary Lynden, and to my right, David Wooley. I publicly acknowledge and thank them for their splendid and dedicated work on these matters over the years.

I am the attorney general of New York, and I also am currently serving as chairman of the Environmental Committee of the National Association of Attorneys General. I am appearing here today in my capacity as the State's chief legal officer and the head of the New York State Department of Law.

I want to initially thank the members of this committee for the opportunity to address the proposed amendments to the Federal Clean Air Act. The committee should be commended by all for the fine work that it has done in the development and presentation of Senate bill 768. It is unfortunate that the full Congress has not yet followed the committee's lead in passing this bill, but, nevertheless, reconsideration of this legislation in 1983 and 1984 gives us all the opportunity to recommend certain changes which would increase its effectiveness in protecting the Nation's health and environment.

In my remarks today I will address three matters of utmost concern to the people of New York. These are the problems of acid rain, hazardous air pollutants, and interstate air pollution. These are problems to which my office has devoted substantial efforts in administrative proceedings, Federal court cases, and previous testimony before this Congress. In particular, the attorney general's office in New York, in cooperation with other northeastern State attorneys general and private environmental groups, has pursued a litigation campaign to force full implementation of the 1977 Clean Air Act amendments dealing with interstate air pollution, including acid rain and hazardous air pollutants.

Despite some gains in these areas, however, our experience in the courts and administrative agencies under the existing Clean Air Act has been disappointing. Some of our efforts to prevent increases in acid rain and to reduce interstate air pollution have been frustrated as a result of weaknesses in the current law.

Even our successes in the areas of hazardous air pollutants and tall stack regulation have underscored the slowness and the inadequacy of the pollution control mechanisms of the existing law. In these areas the current Clean Air Act appears unable to prevent severe environmental and health damage, and a substantial overhaul is desperately needed. My testimony today is directed at recommendations for accomplishing this task via the Senate bill 768.

Let me now address the issue of acid rain. New Yorkers suffer heavily from acid rain damage. This is due to its location in an air transport corridor which brings large quantities of sulfur and nitrogen pollutants from the Midwest.

Pronounced damage also occurs by reason of the large areas of highly sensitive soil and water resources in our unique Adirondack Park, the Catskill Park, and the Hudson Highland areas.

New Yorkers also suffer severe health damages associated with acid rain. This is because the acid rain precursors, in the form of fine particles of sulfate and nitrate, attack the lung systems of our people.

Senate bill 768 addresses the problem by mandating an 8-million-ton emission reduction. The Senate committee's report in 1982 described this as, and I quote now, "the minimum amount needed to protect the most, but probably not all lakes and streams." This amounts to a 35-percent reduction in the 1980 level of emissions in sulfur dioxide.

Since the date of the committee's action, the National Academy of Sciences published its long-awaited and definitive analysis of the acid rain problem. The Academy concluded that a 50-percent reduction in acid deposition is needed to prevent the damages.

For these reasons, I respectfully urge that this committee increase the tonnage reduction goal in Senate bill 768. Several estimates have been made to show that a 12-million-ton reduction in sulfur dioxide emissions would achieve a 50-percent reduction in acid deposition.

In March 1983, Senators Stafford and Hart introduced a bill calling for a 12-million-ton reduction. Senator Durenberger's bill also calls for an emission reduction greater than S. 768. I urge this committee to adopt the 12-million-ton emission reduction goal and to urge its passage by the Senate as a whole.

An important consideration in the passage of any acid rain legislation must be the effect of its provisions upon jobs and coal production. The cheapest method of achieving large emission reductions is by fuel switching. This would entail a shift in purchases away from the high sulfur producing regions of the upper Midwest to the low-sulfurcoal production regions of the mid-Appalachian States and far West. The resulting shift in production could displace many thousands of jobs from one region to another, and result in economic disruption.

Senate bill 768 places no restrictions on the manner in which pollution sources must attain their emission reduction requirements. Fuel switching, therefore, will be the primary means chosen to achieve the mandated reductions.

In 1982, the Senate committee report estimated that 1990 coal mining employment levels would fall 33 percent in the Midwestern States of Illinois, Indiana, and western Kentucky as a result of the fuel switching effect of Senate 768.

I believe that the Nation as a whole has a significant interest in avoiding this sort of economic disruption. Over the past decade we as a Nation have invested huge amounts of economic and human resources in developing the high-sulfur coal production infrastructure. This development is accompanied by patterns of economic life essential to many communities in those areas. All of us have seen the disastrous effects of unemployment in this Nation, and we must be sensitive to the fact that requiring large numbers of coal miners to relocate in areas far from their homes imposes a significant human cost which is difficult to express in economic terms.

Therefore, I am urging the committee to amend S. 768 to add a requirement that a large percentage of the total emission reduction goal be achieved through technology controls such as use of scrubber systems, coal cleaning facilities, and more advanced controls such a fluidized bed combustion or limestone injection multistage burners.

We must all recognize that the cost to the Nation of requiring technological control is higher than for other proposals. I firmly believe, however, that this cost can and should be borne.

It is uncontroverted that a large percentage of the needed emission reductions must occur in the Midwestern States. Until recently, it has been assumed that the simplest and most equitable means of assigning pollution control costs is to require the polluter to pay. The Midwestern States have traditionally enjoyed relatively low-electric costs, resulting from the use of inexpensive high-sulfur fuels. In contrast, the northeastern States have developed stricter emission limits and have opted for more expensive, lower sulfur fuel.

Although the move toward coal is increasing in the Northeast, many States, including New York, are determined to hold the line in sulfur emissions. Recently, for example, the conversion of two large New York City powerplants from oil and gas to coal fuel was approved, however on the condition that scrubbers be installed to minimize emissions.

The inequities of the current situation are apparent. The northeastern States are paying high prices in order to preserve clean air, while they are being inundated by pollution generated by the low-cost power production of Midwest industry and utilities. These circumstances must be changed. In doing so, it is essential that much of the cost of these emission reductions be borne by the polluters themselves.

There are other considerations, however, which necessarily temper this position. We in New York need these emission reductions as soon as possible.

In addition, we now know that vast areas in other sections of the country are, indeed, threatened; that this problem is not unique to New York or the Northeast. Congress should not allow another year to pass without enactment of a comprehensive acid rain bill. To put this off until 1984 would be unconscionable.

Moreover, only a large emission reduction, on the order of 12 million tons, will fully protect our people and their environment.

The fulfillment, therefore, of this urgent need appears to have been blocked by concern over the Midwest electric rate impacts that will occur. It may become apparent that passage of a bill by the whole Congress is not possible without some type of cost-sharing provision. If this is the case, then I believe our need justifies support for a compromise bill containing a limited cost-sharing mechanism in conjunction with a 12-million-ton reduction requirement.

Several recent analyses have shown that the effect of various cost-sharing proposals would not be great in any one single State.

We must further recognize that the Nation as a whole will benefit from the reduction of acid rain and the health damages associated with high concentrations of fine particles in our breathing space.

Nationally, it is estimated that we experience at least $5 billion annually in acid rain damage, and this figure does not account for many injuries which are hard to quantify in economic terms, such as human suffering, loss of precious lakes, vistas, and wildlife.

Senator STAFFORD. Mr. Attorney General, could you summarize now in about a minute?

Mr. ABRAMS. OK.

In essence, Senators, I am taking practical account and recognition of the difficult political issues that confront a national legislature in dealing with this issue. This is a problem unique, but not any longer unique to the Northeast.

While a very strong argument could be made that the polluters themselves should pay the cost, we are saying that the need for action is so immediate that we cannot allow another session, another year to go by without effective legislation. Therefore, speaking for what I think is the prevailing view in New York, because polls have shown that New Yorkers are willing to share that cost, I am ready to encourage the Congress to look to a cost-sharing approach that will allow very minor impact upon ratepayers.

Again, because time is so limited, I, therefore, would urge this committee as well to look at some of the comments that we have made with respect to hazardous air pollutants and the impact on interstate provisions of the Clean Air Act, because we have extensively dealt with these issues through administrative procedures that we have undertaken in New York over the past 4½ years, and litigation as well.

Senator STAFFORD. Thank you very much, Mr. Attorney General. There may be some questions from the committee, but in view of our time constraints, if you are agreeable to answering them in writing, we will submit them to you in writing.

Mr. ABRAMS. Certainly.

Senator STAFFORD. I want personally, as a representative of a neighboring State, to express my appreciation to you and my official appreciation as chairman of this committee for your willingness to come down here and help this committee in the effort which it is going to make in this area.

Mr. ABRAMS. Thank you very much, Senator Stafford and Senator Humphrey.

Senator STAFFORD. Thank you.

Now the Chair will invite the first of three panels to come to the witness table: Ms. Pat Shutt, natural resources chair, League of Women Voters; Mr. Steven Howards, National Wildlife Federation; Mr. Leslie Dach, Audubon Society; Mr. Robert Yuhnke, attorney, Environmental Defense Fund.

It would be the Chair's intention to go in the order in which you are listed, starting with Ms. Pat Shutt. However, first, the Chair is pleased to note that Senator Burdick is here.

Senator, do you have any opening statement as to this hearing?

Senator BURDICK. No, Mr. Chairman.

Senator **Stafford**. All right. In that case, again, I apologize for the time constraints, but we will have to ask each of you to conclude within 5 minutes. I think you have been warned about that by staff.

Your full remarks will appear in the record.

The clock is running, Ms. Shutt, and you are on.

STATEMENT OF PAT SHUTT, NATURAL RESOURCES CHAIR, LEAGUE OF WOMEN VOTERS OF THE UNITED STATES

Ms. **Shutt**. Thank you.

My name is Pat Shutt. I am natural resources chair of the League of Women Voters of the United States. I am here to represent more than 200,000 league members and supporters in over 1,300 communities in every State across the country.

Our message today is one of unequivocal support for the reauthorization of a strengthened Clean Air Act. League members know that the Clean Air Act has reduced the levels of pollutants which cloud the sky with poison and diminish public health.

But league members also know that millions of people live in areas that still have unhealthy air for many months each year. We know there are dangerous, toxic air pollutants which are not yet under any control. League members also know there is no conflict between a thriving economy and environmental protection. We believe that industrial revitalization must be accomplished without graying our skies and blackening our lungs.

Reauthorization of a strengthened Clean Air Act has been a top legislative priority of the League of Women Voters for the past 3 years. We have been heartened by Congress refusal to substantially weaken the act, but now the time has come for Congress to act affirmatively to control acid rain and toxic pollutants. Each day Congress delays, damage to human and natural resources continues unabated. Thus, we are pleased that you have scheduled this set of comprehensive Clean Air Act hearings.

I would like to restrict my remarks this morning to several specific areas where we feel the Clean Air Act needs to be amended and to some provisions in S. 768 that need major improvement.

First, let me speak to an issue that goes to the hearts of what the League of Women Voters is all about: citizen participation. The league believes that a fundamental requirement for successful implementation of the Clean Air Act is an informed and active citizenry. Citizens need access to legal and technical expertise in order to participate effectively in the regulatory process.

One of the weaknesses in the present law is that there is no specific requirement for encouraging and providing for public participation in the implementation of the act. Under Administrator Burford, we saw EPA's administration of environmental laws begin to squeeze citizens out of the decisionmaking process. Specific statutory language such as that found in the Clean Water Act should be added to the Clean Air Act to insure that public participation is an integral part of the law.

Second, the recent string of scientific studies from the Interagency Task Force, the White House Office of Science and Technology Policy, and the National Academy of Sciences has all documented the need to act now to control the pollution that causes acid rain. The environmental effects of acid rain are cumulative and irreversible. We must begin action now to reduce emissions by 50 percent within 10 years.

Last year's committee bill, which has been reintroduced by Senator Stafford under the number S. 768, contains a provision to reduce annual sulfur dioxide emissions by 8 million tons in the Eastern part of the country. This reduction is insufficient. We urge you to enact a 12-million-ton, 10-year program for the control of acid rain with the dispatch that the urgency of the situation demands.

Above all, we must not forget the original intent of the clean air legislation—to protect public health and welfare. The league believes that prompt congressional action is needed to spur EPA to speed up controls of an important class of largely unregulated air pollutants—hazardous substances. There are dozens of airborne toxic substances emitted from chemical plants, refineries, coke ovens, and smelters that may be implicated in cancer, genetic damage, nervous system disorders, birth defects, and other serious health problems.

Many of the same toxic chemicals that have been found in hazardous waste dumps and in ground and surface water are also present in the air. EPA's list of priority candidates for possible regulation as hazardous air pollutants includes substances such as chloroform, carbon tetrachloride, formaldehyde, PCB's, and more than 30 others. EPA has long had authority to bring these pollutants under control. Yet, in 13 years EPA has promulgated final regulations for the control of only four hazardous air pollutants from major industrial sources.

Provisions are needed to accelerate the identification, listing, and regulation of additional hazardous air pollutants. Protecting public health with an ample margin of safety must remain the goal.

For each listed pollutant Congress should require EPA to set technology-based standards for both new and existing industrial sources. At a minimum, these standards should require plants to install controls at least as effective as the best equipment already in use at a similar source.

The league supports the provisions of S. 768 that incorporate such an approach, but favors the adoption of the Baucus amendment to improve upon it.

Smelters are one of the major sources of toxic air pollutants. Yet, some do not even employ the most rudimentary pollution controls for emissions of conventional pollutants, preferring instead to rely on vagaries of wind and weather to blow the pollution away. Eighty percent of the sulfur dioxide in the West originates in smelters. These emissions are responsible for violations of the health-based air quality standards and visibility impairment, and they contribute to acid rain.

The 1977 Clean Air Act amendments gave smelters a 10-year exemption from pollution control requirements, and S. 768 would extend this deadline by 5 additional years.

Senator **Stafford**. Ms. Shutt, could you conclude now in 1 minute?

Ms. **Shutt**. I sure will.

These are nothing more than a promise to restrict operations on bad weather days. The league opposes this unwarranted extension.

In conclusion, we want to assure you that the public remains Congress greatest ally in continuing the Nation's efforts to reduce air pollution. A January 1983 Harris poll found that 86 percent of Americans think the Clean Air Act should be maintained and strengthened. Last year's committee bill is too weak to form the basis for this year's deliberations, particularly in the areas of acid rain, smelters, and PSD.

The American public and the League of Women Voters want to finish the job of cleaning up the Nation's air and want to continue to keep it clean.

Thank you.

Senator STAFFORD. Thank you very much, Ms. Shutt.

Now, Mr. Steven Howards, from the National Wildlife Federation, we will be glad to hear from you.

STATEMENT OF STEVEN HOWARDS, LEGISLATIVE REPRESENTATIVE, POLLUTION AND TOXIC SUBSTANCES DIVISION, NATIONAL WILDLIFE FEDERATION, WASHINGTON, D.C.

Mr. HOWARDS. Thank you for the opportunity to testify before this committee.

My name is Steven Howards. I am the legislative representative for the Pollution and Toxic Substances Division of the National Wildlife Federation. The National Wildlife Federation is the Nation's largest conservation organization with over 4 million members and supporters. Many federation members are sportsmen, fishermen, and hunters who are concerned about the quality of our natural resources and outdoor life and those activities which jeopardize this heritage for present and future generations. That is why the control of acid rain is the No. 1 legislative priority of the National Wildlife Federation.

In my brief testimony I will address three points: the spreading impacts of acid rain, the National Wildlife Federation's position on acid rain control, and why we believe the acid rain provisions of S. 768 deserve further strengthening.

Acid rain is no longer merely New England's problem or Canada's problem. High mercury concentrations in fish from northern Minnesota and Wisconsin lakes are believed due to acid rain. Michigan's rainfall is, on the average, 30 times more acidic than normal. According to the Florida State Department of Environmental Regulation, up to 60 percent of its northern lakes may be endangered by rainfall 10 to 20 times more acidic than normal.

In Lake Chatuge of northern Georgia, high aluminum concentrations from the leaching effect of acid rain are believed responsible for spinal deformities in fish. Meanwhile the research mounts, indicating that acid rain may adversely affect crop and forest productivity and human health, while costing billions in materials damage.

The manufacturers of Krylon paint now market its product based upon its ability to protect against acid rain. General Motors will no longer warranty car finishes against acid rain's pitting effects. The impacts are spreading far and wide.

Acid rain is no mystery. Research clearly shows that its primary cause is sulfur dioxide emissions from coal-fired powerplants. The National Academy of Sciences has concluded that to protect our lakes and streams we need at least a 50-percent reduction in rainfall acidity in the Eastern United States. The Academy also found that a near linear relationship exists between rainfall acidity and SO_2 emissions. Thus, to achieve the prescribed 50-percent reduction in acidity, we need at least a 50-percent reduction in SO_2 emissions. This is why we support a 12-million-ton or 50-percent reduction in annual SO_2 emissions.

Over 90 percent of our Nation's sulfur dioxide emissions are generated in the Eastern 31 States. This region is most vulnerable to acid rain because of the low natural buffering capacity of its land and surface waters. Not coincidentally, this is also the area where most of the documented damage has occurred. That is why there must be a clear emphasis on reduction in the Eastern 31 States.

The National Academy of Sciences has also concluded that, absent adequate controls, the number of acidified lakes could be expected to more than double by 1990. The impacts of acid rain may be irreversible. This is why we believe the reductions must occur as soon as possible, in 10 years or less, with significant interim reductions.

Since last year there has been a dramatic shift in the acid rain debate. Even the White House's own panel of scientists has recommended that immediate steps be taken to "meaningfully reduce" SO_2 emissions.

The issue is no longer whether we need to control acid rain and whether we need an acid rain control program, but rather the issue is the type of program we need.

The need for strong acid rain controls is further confirmed by a recently completed, soon-to-be-released National Wildlife Federation survey of acid precipitation by scientists from across the Nation. By a 7-to-1 margin, the nearly 100 scientists responding favored some form of acid precipitation control program now over delaying further controls pending the results of more research and monitoring.

By a 5-to-1 margin, they were more supportive of broad reductions throughout all, or most, of the Eastern 31 States than they were of targeted reductions in only a few States. Interestingly, of the six Environmental Protection Agency scientists who anonymously responded, four favored reductions greater than those proposed in the EPA Administrator's so-called preferred option.

Four out of five scientists considered the risk of irreversible natural resource damage due to acid precipitation to be sufficiently great to necessitate immediate and decisive steps to curtail the emissions that cause acid rain.

The control option receiving the maximum support was a 10-to-12-million-ton reduction in sulfur dioxide emissions throughout the Eastern 31 States, plus reductions in eastern Canada.

In closing, we compliment this committee in its effort to hammer out acid rain control legislation and for holding these hearings. The acid rain provisions of S. 768 move in the right direction, calling for a significant reduction in sulfur dioxide emission over the hard-hit eastern sections of the country. However, this bill does not move far enough. This is a new Congress with a bounty of new information at its disposal. This new information, we believe, demonstrates quite clearly the need for immediate control action and for further strengthening of the acid rain provisions of the committee package.

We urge this committee to move forward with this goal.

Senator **STAFFORD**. Thank you very much, Mr. Howards. The Chair compliments you on doing it within the 5 allotted minutes.

Now we would be very happy, Mr. Dach, to hear from you.

STATEMENT OF LESLIE DACH, NATIONAL AUDUBON SOCIETY

Mr. **DACH**. Thank you, Mr. Chairman.

My name is Leslie Dach. On behalf of the half a million members of the National Audubon Society, I would like to thank you for the opportunity to appear here today.

I, too, would like to compliment the committee for scheduling this series of hearings. I can imagine that the prospect of restarting the arduous process of reauthorizing the Clean Air Act was not greeted with unanimous joy by all those in the room today, but the chairman has correctly recognized that these hearings are an important beginning in the necessary process of passing a Clean Air Act in this session of Congress.

S. 768, to its credit, does strengthen the current Clean Air Act in two important areas—acid rain and control of toxic air pollutants, but the Audubon Society believes that S. 768 must itself be strengthened in these two areas.

Concerning toxic air pollutants, we would specifically like to see S. 768 amended to:

First, speed up the timetable under which EPA must determine whether a pollutant is hazardous within the meaning of the law.

Recently EPA Administrator Ruckelshaus testified before the House Energy and Commerce Committee and indicated that EPA would commit itself to making listing decisions on approximately 22 chemicals by the end of 1985. S. 768 should be changed to codify this commitment and to require an additional decision on 15 chemicals by the end of 1986.

Second, we would like to see S. 768 amended so that a formal permit program is adopted for insuring compliance of existing sources with the emissions standards currently included in the law. Under current law the program for existing sources is essentially self-implementing. We feel strongly that a formal permit program is necessary to insure compliance.

Third, we think S. 768 must be altered to clarify the minimum technology requirements currently in the bill. We object to the ill-defined requirement for showing of an adequate operating history that currently exists in S. 768, and the bill's narrow class and category definition of sources.

On the subject of acid rain, we feel that the 8-million-ton, 12-year-reduction program in S. 768 is too little too late. We would urge this committee to embrace the National Academy's conclusion and to mandate a 50-percent reduction in SO_2 emissions in the Eastern United States by 1993.

We are gravely disappointed with the actions of this administration to date on acid rain. The President and Mr. Ruckleshaus have failed to deliver an acid rain proposal to Congress. The proposals that we understand are before the Cabinet Council are wholly inadequate to deal with the problem.

At the same time that this legislative stonewall continues, EPA is busy proposing backtracking regulations in crucial regulatory areas, such as the standards for emissions from coal-fired powerplants.

Next we would like to address S. 768's weakening changes to the current law's prevention of significant deterioration program. S. 768's basic compromise was to allow States to opt out of the increment system for nonmandatory class II areas. We remain unconvinced that this change is warranted. We would hope that as the committee deliberates the PSD program once again that, in addition to reconsidering last year's opt-out decision, the committee take a number of steps to increase protection for class I areas. We would hope that certain new areas can be designated by statute as class I, including new national parks formed after 1977 and the areas identified by the Department of the Interior in 1980 as deserving this redesignation.

We also suggest that the committee review and strengthen the current law's procedures for allowing waivers from the class I increments be granted by the Federal Land Manager. We feel strongly that this waiver procedure must provide for an opportunity for public comment and public hearing, and should be made clear that the decision of the Federal Land Manager be subject to judicial review.

The law should also be amended to require that before a waiver can be granted sufficient biological and other data be developed to demonstrate that adverse impacts will not occur. Under current law ignorance can support a positive waiver determination.

The Audubon Society remains strongly opposed to those sections of S. 768 that weaken current law for emissions from nonferrous smelters. Nearly half of all SO_2 emissions from smelters could be eliminated if sources complied with the provisions of current law by 1988, but instead of enforcing the current law, S. 768 proposes to dramatically weaken it. It would allow a further extension of smelter noncompliance until 1993, and authorize the permanent use of supplementary control systems in place of continuous pollution control technology. We strongly oppose both of those weakening changes. We know clearly that SCS does not work. Current law allows the use of supplementary control systems to meet the ambient air quality standards, and our current experience shows hundreds of standards violations each year.

We would support strengthening current law for smelters. We would suggest that the committee consider establishing a deadline for EPA's issuance of the second primary nonferrous smelter compliance order. The time ticks away toward the date in 1988 when these facilities must comply with the law, and the agency has yet to issue a single second NSO.

Senator STAFFORD. Mr. Dach, could you finish in about a minute?

Mr. DACH. We would also suggest that the law be amended to establish a firm penalty for those smelters whose emissions continue to violate the Ambient Air Quality Standards.

Finally, we would urge the committee to look into clarifying the current law to require an enforceable compliance schedule for all facilities seeking extensions until 1988. In EPA's proposed regulations certain facilities are allowed to exempt themselves from th need for enforceable compliance schedules.

The testimony so far has focused primarily on criticisms of S. 768. We would be remiss in not complimenting this committee on those sections of S. 768 which did maintain and strengthen the current law, including the maintenance of tight standards for auto and truck emissions and the maintenance of the percent reduction requirements in the current Clean Air Act.

I appreciate the opportunity to appear here today. Thank you.

Senator STAFFORD. We appreciate your coming and helping us, Mr. Dach.

Mr. Yuhnke, we would be glad to hear from you.

STATEMENT OF ROBERT YUHNKE, ATTORNEY, ENVIRONMENTAL DEFENSE FUND

Mr. YUHNKE. Thank you, Mr. Chairman and members of the committee.

I am Bob Yuhnke, an attorney with the Environmental Defense Fund [EDF] in our Rocky Mountain office. I appear here today on behalf of all of EDF's 50,000 members to urge action on the most important piece of unfinished business from the public health agenda of the 1970's, toxic air pollution, and also action on acid rain, to make sure that the first agenda item of the 1980's does not continue to remain the first agenda item of the 1990's.

You have heard from EDF before frequently on issues of toxic air pollution and acid rain in the East. Dr. Oppenheimer from our New York office has appeared here frequently on the acid rain issue, and I will not repeat his testimony other than to say that EDF's position is clear—that we support the need for a 12-million-ton program, which we feel is well documented by the science.

What I do want to focus on here today, however, is the acid rain problem in the West, one that you have not heard much about.

The need for strategies designed to protect the extremely vulnerable watersheds of the western high country is becoming increasingly clear. From the Sierras and the Cascades on the west to the Continental Divide in the Rockies on the eastern side of the intermountain west, tens of thousands of high altitude lakes are at risk.

New research in only the past year by the Forest Service, the Park Service, and EPA has revealed that the pristine watersheds of the wilderness high country of the West have little to virtually no buffering capacity. Lying on bare granite or volcanic rock in glacier-carved valleys, these lakes have average alkalinities from 50 microquivalents per liter down to zero. That does not mean they are dead lakes. They are healthy lakes, but by comparison with lakes in Canada and the Northeast that have already suffered the ravages of acidification, they are 2 to 10 times more sensitive. In other words, they can tolerate 2 to 10 times less acid before they begin to show major changes in lake chemistry.

Recent environmental impact statements prepared by the Interior Department for oil shale projects in Colorado and gas field developments in Wyoming have predicted significant reductions in the pH of downwind, high altitude lakes. For example, emissions of SO_2 and nitrogen oxides from Chevron's proposed 100,000-barrel-a-day oil shale project are expected to reduce nearly a full pH unit during snow melt in lakes in the flat tops wilderness. That would reduce the pH to below the level recommended by EPA for the protection of naturally reproducing trout populations and would violate the State water quality standards for those lakes. That is based upon the expected emissions from only one large oil shale project.

The State of Colorado has attempted a cumulative assessment of the expected results of a large-scale industry. They have predicted that cumulative impacts of a 1.1-million-barrel-a-day industry will reduce lake pH's down to as low as 4.9 in the flat tops wilderness downwind from the oil shale region. At this level fish populations would be expected to die, and toxic metals in surface waters increase substantially.

Those data are not EDF's data. Those are the results of an analysis by the State of Colorado. Knowing what we do now, there is no need in the West to repeat the devastation that we have seen in the East. Strategies designed to prevent acidification must be adopted now, however, if we are going to prevent that result.

Four oil shale projects got air permits last year. Three more have applied for permits this year, and three more are in the process of preparing preliminary EIS's.

The notion that shale, synfuels development in the West is dead is wrong. Shale development is moving forward. The companies are asking for permits. The only question is not whether, but when the impacts of this development will occur.

EDF recommends three major elements for western acid rain strategy:

First, retain the provisions of the current law that will achieve a 30-percent reduction below current SO_2 emissions in the intermountain West by 1988, when the smelter industry is required to comply with emission limits.

Second, add to the PSD program a requirement that new sources demonstrate that their emissions will not cause an exceeding of the current water quality standards set under the Clean Water Act.

Third, enact PSD increments for NO_x emissions.

A smelter cleanup in the West is important because smelters emit approximately 70 percent of the SO_2 in the intermountain region. This cleanup is needed only to keep us running even, because in 1984 and 1985 two new smelters will come on line in Mexico without controls that will more then exceed the amount of emission reduction we will achieve from American smelters by 1988.

The need for tying this new source review under the act to water quality is necessary because the current law does not regulate the deposition of acids into sensitive environments. This is true because we only regulate SO_2 in the increments. Sulfates and nitrogen oxides are not now regulated under the PSD program. If we are going to effectively protect these sensitive environments, we have to have this new criteria for permanent review.

Third, it is important to add increments for NO_x to the PSD program because stationary source emissions in the West are growing much faster for NO_x than they are for SO_2.

In order to insure that NO_x increments are made effective, it is also important that we not contain or continue the PSD opt-out language of S. 768.

Mr. Chairman, I urge the committee to carefully consider the needs of the West in developing a national acid rain strategy. We should not be in a position 10 years from now of having to devise a retrofit strategy for the West, such as the struggle that we are going through now to protect the Northeast. We know enough; we should be able to protect those pristine watersheds.

Thank you.

Senator STAFFORD. Thank you very much.

Thank all of you on the panel. We really appreciate the trouble and work you have gone to in order to be here with us this morning. We wish we had more time.

There may be questions in writing for members of the panel. If that would be agreeable to you, you could respond at your earliest convenience.

Senator Burdick, do you have any questions?

Senator BURDICK. Just one.

Senator STAFFORD. All right.

Senator BURDICK. Mr. Howards, you conclude your testimony this morning by saying it is time for "immediate control action."

We had a representative of the National Academy of Sciences before the committee about a week ago. He said it would take a period of 10 to 15 years before we had full information about the problem. I got the impression that they could not move on something definite until they had more information.

Do you have any reaction or comment on what the gentleman said?

Mr. HOWARDS. Senator, I think the Office of Science and Technology Policy perhaps best articulated that response, and that is that we do not think our information will ever be perfect on acid rain. At some point we have to go with what we have. We have to take a well informed, scientifically supported action. As OSTP said—there are risks to proceeding too quickly, but the risks of not proceeding may be even greater. There definitely are areas where additional scientific research would be useful and helpful. However, I feel strongly that there is a scientific basis to go forward now.

Senator BURDICK. Mr. Chairman, I want to ask one more question.

This is for all of you. Are your organizations working in concert with Canada on this question? The reason I ask is that I come from a State that borders on Canada. I think we need some cooperation up there. Have you been in contact with people there?

Mr. HOWARDS. I think we all work with Canada to the extent that our goals are common. The Canadian Government has committed to the United States, to this administration, that if we reduce our emissions by 50 percent, they will do likewise. If we pass a 12-million-ton program or take that initiative, I think we all plan to hold the Canadians to that agreement.

Senator **Burdick**. The reason I ask is that I know about some powerplants just across the border that are not exactly pleased. This stuff travels around in various ways at various times depending on the air currents. I think we have to approach this from almost a continental point of view to really answer the question.

Mr. **Howards**. Senator, your point is well taken. There is a group called the Canadian Coalition on Acid Rain. It is also working very actively to make sure that smelter emissions and emissions from facilities in Canada are also brought under control.

Senator **Stafford**. Do you have any questions?

Senator **Humphrey**. No, I have no questions.

Senator **Stafford**. I thank this panel.

I will ask the next panel if they will please come to the witness table: Mr. Barry Boyer of the New York chapter, Sierra Club; Mr. Ted Unkles, New Hampshire Sierra Club; Ms. Diane Geerkin of the Vermont Sierra Club; and Carol Baudler of the Midwest Region Sierra Club.

I am going out of the order in which I have called your names because I know that Senator Humphrey would like to introduce the representative of the Sierra Club from New Hampshire.

Senator Humphrey, as soon as the four are at the table, why don't you go ahead. We would appreciate an introduction.

Senator **Humphrey**. Thank you, Mr. Chairman. I do want to take just a moment to introduce a resident of the State of New Hampshire, Ted Unkles, who is chairman of the Upper Connecticut River Valley Group of the Sierra Club, one of the three Sierra Club groups in the State of New Hampshire.

He has been active on the executive committee of the upper valley group for 4 years. He is a graduate of Dartmouth with a degree in earth sciences, and completed a thesis on how acid rain is affecting the geochemistry of a stream in the White Mountains. He is currently enrolled in a master's of science program in resource management and administration at Antioch New England Graduate School in Keene, N.H.

It is my pleasure to welcome him here today.

Senator **Stafford**. Thank you, Senator Humphrey.

I want to remind this panel of something I told the earlier panel, that we are going to have to hold you to 5 minutes. I think you have been warned about that.

Where statements have been supplied to the committee, they will appear in the record.

I am going to start, Mr. Unkles, with you, and then even chairmen subside to parochial interests at times, and I am going to hear from the representative from my own State secondly, Diane. I am putting you on notice.

Its now being 11:55, Mr. Unkles, you are on.

STATEMENT OF TED UNKLES, CHAIRMAN OF THE UPPER VALLEY GROUP, SIERRA CLUB

Mr. **Unkles**. Thank you, Mr. Chairman.

My name is Ted Unkles. As Senator Humphrey said, I am chairman of the upper valley group of the Sierra Club, but I am down here today speaking on behalf of all three Sierra Club groups in New Hampshire.

I would like to make a few brief comments first about acid rain. All of New Hampshire is very seriously affected by acid rain. Our soil is deficient in calcium and we we are underlain largely by either granite or other inert bedrock. My research while studying at Dartmouth College demonstrated how these soils did not neutralize the acid rain—I should say how poorly they neutralize the acid rain. Suffice it to say that there are devastating effects on both terrestrial and aquatic ecosystems.

Much of the data collected in the report released by the National Academy of Sciences, which we have heard referred to several times at this hearing, was collected in the Habbard Brook Watershed, which is in New Hampshire's White Mountains.

The New Hampshire Groups feel very strongly that New Hampshire and the Nation need legislation mandating a 12-million-ton reduction of sulfur dioxide emissions over a 10-year period.

The Sierra Club has also maintained a longstanding interest in the Clean Air Act prevention of significant deterioration program, PSD. In fact, it was the Sierra Club lawsuit which originally forced the EPA Administrator to establish a program to limit the degradation of air which is already cleaner than the National Air Quality Standards.

The New Hampshire Groups of the Sierra Club strongly support the existing PSD program. It has protected our clean air in New Hampshire, which is one of our State's most important resources, since tourism is such a major part of our economy. Proponents of the elimination or weakening of the PSD program have not really demonstrated that it has stopped the construction of any industrial facilities.

Last year this committee reported a bill, S. 3041, which has been reintroduced this year as S. 768, which would substantially weaken the PSD program. It permits Governors to remove any nonmandatory class II area from the increment system. Governors are permitted to remove these areas at any time and without an adequate public hearing process.

After a Governor has eliminated the class II increment for a region, the only protection remaining is the BACT determination, the best available control technology, by the State, but this determination is quite inadequate. The best available control technology determination is a balancing process. Without the increment system in place, no legal mechanism will force the development of tougher air pollution control technology and insure proper budgeting of air pollution growth.

The committee's proposed PSD program will pit State against State as Governors weaken class II protections in a bid for new industrial development. New Hampshire and all New England States, and probably most States around the Nation, will be losers here. Since energy in New England is already quite expensive, it may appear especially attractive to many New England Governors to reduce class II standards, and that means dirtier air for everyone.

In your Clean Air Act rewrite in this Congress, the New Hampshire groups urge the committee to abandon last year's proposal. Instead, the committee should adopt more moderate streamlining changes which do not abandon the Federal class II increment program.

I am going to skip on to visibility protection. Small particles of air pollution in the atmosphere scatter and absorb light, which obscures visibility across the Nation. The New Hampshire groups are concerned about the degradation of visibility in New Hampshire and across the country as a result of air pollution increases. This problem is particularly acute in our national park system. In 1980 the Director of the Park Service declared air pollution and visibility the No. 1 problem in our national parks. The Grand Canyon alone experiences 100 days per year when visibility is obscured. Congress wisely saw fit to include a program for protection against visibility degradation in the 1977 amendments to the Clean Air Act.

Two steps must be taken to stop visibility degradation. First, pollution plumes from individual emitters, such as powerplants or strip mines, must be controlled. Second, regional loading or haze must be limited. EPA has issued regulations to implement a phased program to control these varieties of visibility degradation.

EPA has adopted an extremely cautious regulatory program to limit visibility loss. The program puts primary emphasis on State level decisionmaking.

Senator STAFFORD. Mr. Unkles, could you summarize now in 1 minute?

Mr. UNKLES. Certainly, Senator.

The States have the final determination on how to amend their State Implementation Plans to limit pollution after considering the costs and benefits of protecting visibility.

The New Hampshire groups strongly support this program and oppose any weakening changes to the law or to the regulatory program.

I would like to sum up, Mr. Chairman, by simply stating that I have stood upon many peaks within New Hampshire's White Mountains on allegedly clear days and have not been able to see mountain peaks or ridges less than 10 miles away. Visibility obstruction is a major problem in the Northeast and around the Nation.

Thank you very much.

Senator STAFFORD. Thank you very much, Mr. Unkles. We appreciate your testimony.

Now we are going to hear from Diane Geerken, who is from my own State, the State of Vermont.

Diane.

STATEMENT OF DIANE GEERKEN, VERMONT GROUP, SIERRA CLUB, AND THE VERMONT CLEAN AIR COALITION

Ms. GEERKEN. Thank you, Senator Stafford.

My name is Diane Geerken. I come from South Burlington, Vt., and am here today speaking for the Vermont Group of the Sierra Club and the Vermont Clean Air Coalition. The coalition is made up of 10 organizations in our State who have pooled their resources to work for the passage of a reauthorized Clean Air Act that is as strong as what we have, and in some respects will be stronger.

As many of you know, Vermont is a very attractive place. If you have been there, or even just seen pictures, you know what I am talking about. I say that because I think it will help explain some of our views in this State that I am going to be mentioning.

As you are probably aware, Vermonters consider our Senator Stafford as a champion of the Clean Air Act because he steadfastly insists on not allowing it to be weakened.

Senator STAFFORD. I won't do it, Diane, but I am tempted to give you an extra minute to continue.

Ms. GEERKEN. I will try to stay within the time.

We know what he is doing is vitally important to us and to the rest of the Nation, and we hope that the other committee members will follow his lead.

We urge you under no circumstances to permit weakening of the protection provided for in the Clean Air Act currently in effect. For example, we believe that all Americans should be protected from unhealthy levels of air pollution. The standards are now set to safeguard everyone's health, including those in particularly vulnerable groups such as the elderly, children, and people with respiratory ailments and heart disease. The American people expect all groups to be protected and believe this can be achieved. As you have certainly heard, an unexpectedly large number of people have indicated that cost should not be a deterring factor.

On the question of restricting auto pollutant emissions, we in Vermont have reason to believe that the requirements of the present law have reduced carbon monoxide levels in an area where standards were not previously being met—in our largest city, Burlington.

The monitors show a lowering of carbon monoxide levels at a time when traffic has definitely not diminished. Given the timeframe, we are guessing that the reduction results from the required emissions controls on later model automobiles. This condition must not be allowed to deteriorate by a weakening of the present requirements.

A third area of concern to Vermonters is the prevention of significant deterioration. Because most of our air quality is to be maintained rather than improved, we rely on the present requirements for not allowing undue deterioration. We believe the law, applied nationwide, is necessary to prevent competition among States for setting low enough standards to attract industries which are seeking that when deciding where to locate or whether to move. Therefore, we urge you to keep the present PSD provisions in force. If any changes are made which are said to be minor, please be sure they are truly that and will not result in less protection.

In addition to maintaining the strength of the current Clean Air Act, we are seeking to convince committee members that it is high time for language which speaks to problems caused by the long-range transport of pollutants, especially acid rain.

It is evident in Vermont that a sizable portion of harmful pollutants measured in our air do not originate in our State. If we wish to reduce the levels of pollutants, our only option as of now is to control emissions in Vermont, as we must do in some cases to comply with Clean Air Act standards. We have responded to that with appropriate restrictions, but there is no way to reduce damaging pollution from outside Vermont.

This strikes us as a patently unfair situation, particularly when we realize that one reason so much sulfur pollution reaches us from long-range transport through the atmosphere is that extremely tall stacks have been permitted on powerplants to our south and west, so that Clean Air Act standards could be met in the areas where the plants are located.

Senator **Stafford**. Could you please summarize now?

Ms. **Geerken**. OK.

I would like to take just a moment—I do have an illustration to show what our air looks like in Vermont on days when the wind is blowing from the Southwest and on days when it is blowing from the Northeast. It is quite a contrast.

I also want to say a word about this: We do believe that the risk of not doing anything is far greater than the risk of doing something which may not be perfect.

If you are hesitating, I would say to committee members, to support a reauthorization bill which will maintain the strengths of the present act and address the acid rain problem, please ask yourself what the majority of your constituents desire from a Clean Air Act, and then you can refer to some of the polling results that came from Lou Harris surveys.

One that strikes me as being quite a strong indication is that now it is registered that 47 percent of the respondents do believe that the Clean Air Act should be strengthened, and this is up from a figure of 29 percent 2 years ago.

Clean air advocates do rely on the committee members and your colleagues in the Senate, as our representatives, to take responsible action regarding the Clean Air Act.

Thank you, Senator Stafford.

Senator **Stafford**. Thank you very much, Diane.

Next we are going to start west, and that means, Mr. Boyer, that you are next with the New York chapter.

STATEMENT OF BARRY BOYER, CHAIRMAN, AIR RESOURCES COMMITTEE, ATLANTIC CHAPTER, SIERRA CLUB

Mr. **Boyer**. Thank you, Mr. Chairman.

On behalf of the 20,000 members of the Sierra Club in New York State and the countless other sportsmen, environmentalists, and concerned citizens who are very interested in the progress of the Clean Air Act reauthorization, I would like to thank you for this opportunity and address briefly two issues which are of special concern in New York and the Northeast, acid rain and toxic air pollution.

The need for action on acid rain we feel has been convincingly demonstrated both by the science, the series of reports that has been mentioned by other speakers, and by public opinion polls, which I am sure are very familiar to the members of these committees and which I will not really address.

The feasibility of action has also been demonstrated, we feel, both in my own hometown of Buffalo, where there is a demonstration project recovering sulfur for commercial purposes out of powerplant emissions, and by our neighbors to the north in Canada. Senator Burdick mentioned the experience in Canada. There is a recent report by the Canadian Government, which I will be happy to submit for the record, which indicates that the Canadians have been much more successful than we have been in reducing sulfur emissions without adversely impacting their economy.

The obstacles to action, then, appear to us to be primarily economic and institutional, and it is these that I would like mostly to address.

The acid rain issue is sometimes portrayed, we think erroneously, as a zero sum game between the emitting States and the downwind States, in which the question is whether the lakes and streams of those of us who are on the receiving end will be sacrificed to save jobs and preserve the economy in the emitting States. That, we think, is a fallacious way of approaching the problem.

As the bill before us recites, this is a national and an international problem. The Adirondacks Forest Preserve, which is imperiled by acid rain, is not a private playground for New Yorkers. It is a regional and a national treasure which we need to preserve.

The economy of our country is integrated, and we are not certainly trying to beggar our neighbors in the upwind States of the Ohio Valley.

As we see it, the key task for all of us concerned about this problem now is to find mechanisms to deal with these problems through some form of cost sharing and incentives that will adequately address the concerns of each region.

I do not today have any proposal for a blueprint on how to do this. There are a lot of interesting ideas that are suggested in several of the bills now proposed. The point that I would like to make is that those of us in the environmental community support the committee's efforts very strongly to find some way to deal with those problems, and we will be happy to work with you in any way that we can to find a fair and equitable solution.

I would like to mention just briefly four basic propositions that we would urge on you. The first is that we desperately need your help. There is only so much that we can do ourselves, as Attorney General Abrams described it, under the existing law. It is not adequate to deal with the 70 percent of emissions that are coming from out of State and are outside the control of New York and the other downwind States.

We also need a real program that will address the problems in a systematic fashion. The figures that we are seeking, the 50-percent reduction, the 12 million tons, are not something that we would like, but they are estimates based on the best available science. If we fall too far short of what is needed by the realities of the land and the waters, then we are likely to come up with the worst possible situation, a very costly program which does not achieve anything more than simply delaying the loss of our lakes and streams for a few years. So we would urge you to try to report the strongest possible bill that you can.

We would also urge that the so-called zero option of doing nothing is not simply a cost saving. It perpetuates the most inequitable, the most destructive way of dealing with the acid rain problem. Acid rain, as other speakers have said, affects not just a few fish, but forests, ecosystems, buildings and materials, human health, and the economy of the region as a whole. It is imperative that we find some generally fair and equitable way to deal with this problem.

A few points to be mentioned with respect to the toxic and hazardous air pollution problem: it is well known that EPA has experienced enormous regulatory lag in dealing with hazardous air pollutants. We strongly support the provisions of the committee bill that are strengthening the Clean Air Act in this respect. We believe that three kinds of improvements could be made, and we would urge the committee to consider these kinds of amendments.

One would be that deadlines for action for EPA on toxic air pollutants could be accelerated, as suggested by the testimony of Mr. Ruckelshaus on the House side recently. We think a more feasible set of deadlines would including the listing of 25 substances by the end of calendar year 1985, and within 3 years the action on an additional 15 substances.

We also suggest that substances determined by the national toxicology program to be carcinogens should be acted on within 1 year by the Environmental Protection Agency.

Finally, we suggest that the establishment of a permit program to require enforceable compliance schedules is the most effective way to assure that action is finally taken to deal with some of these carcinogens and other toxic air pollutants.

Thank you, Mr. Chairman.

Senator **STAFFORD**. Thank you very much, Mr. Boyer.

Now we will hear from Ms. Carol Baudler of the Midwest Region, Sierra Club.

What part of the country are you from?

STATEMENT OF CAROL LEE BAUDLER, SIERRA CLUB, NORTH STAR CHAPTER, MINNESOTA

Ms. **BAUDLER**. I am from Minnesota.

Senator **STAFFORD**. Minnesota. All right.

Ms. **BAUDLER**. Thank you, Mr. Chairman.

My name is Carol Lee Baudler, and I am representing today the North Star Chapter of the Sierra Club in Minnesota. I appreciate the opportunity to appear before the committee. Today I would like to talk a bit about the acid rain problem in Minnesota, but first I would like to discuss the Sierra Club's views regarding the smelter provisions of S. 768.

The special provisions for nonferrous smelters would allow the continued release of sulfur oxide emissions that violate health standards and are major contributors to growing visibility impairment and acid rain in the West.

The Western smelters emit 1.1 million tons of SO_2 per year, nearly 80 percent of such emissions generated by sources west of the Continental Divide. Because of the cyclical nature of the smelting markets, this industry has received special exemptions from the requirements that apply to all other industrial emitters. While it is appropriate for Congress to insure that no undue hardships are placed upon any individual industry by the act's requirements, any relief provided must insure that compliance is eventually achieved and that the industry does the best it can in reduction during the interim.

The committee bill extends the currently authorized nonprimary smelter orders, NSO's, for an additional 5 years, allowing operating under such orders until 1993, 23 years after initial passage of the Clean Air Act.

Yet, the new provisions provide no assurance that after the NSO's end facilities operating under such orders will have made the necessary investments to insure they will be in compliance with Clean Air Act requirements. Also, no interim requirements are placed on these facilities to control any more emissions than they control today. Yet, some smelter facility owners have already stated that they will close rather than install necessary controls.

Therefore, while the committee provisions purport to establish a system of forbearance in exchange for eventual compliance, the system is in fact a legal fiction that allows open ended noncompliance. Newer smelter facilities are given every incentive to avoid compliance in order to remain competitive with older plants that are not required to do any emissions control.

We believe that the committee rewrite of the NSO provisions simply extends the compliance deadline by 5 years and insures that we will be in exactly the same untenable position in 1988 as we are today. We urge the committee to examine a whole new approach that would focus on requiring a series of commitments from facilities currently operating under or seeking NOS's that would result in both modernization of facilities and installation of controls necessary to achieve compliance by 1988. Any extensions of compliance beyond 1988 should be predicated on good faith efforts before such date. Further extensions must be very limited as to the facilities to which they apply, and again predicated on firm, enforceable commitments to modernize and control.

The second modification the committee bill makes to smelter requirements is to permanently allow the use of "supplemental control systems," SCS, as a means of compliance with the act. The committee bill would allow any smelter to use this technique during 5 percent of the year.

We urge the committee to drop the provisions of the bill which allow the use of SCS on a permanent basis. Current use of this system clearly indicates that it simply does not work.

The use of SCS also enables smelters to avoid the installation of continuous emissions reduction technology that would reduce SO_2 emissions every day of the year, not just on air stagnation days. The committee bill would, in effect, allow a vast increase in annual SO_2 emissions compared with existing law.

Increases of emissions will only exacerbate visibility and acid rain impacts that will be very difficult to control in light of the aggressive development of energy resources that is expected in the West over the next two decades.

This is important to me as a Minnesotan because of the increase in pollution likely to be borne to Minnesota on prevailing westerly winds. Minnesota receives air pollution generated in the highly industrialized States to the east, as well as States west of its borders. Our State produces only about 1 percent of the annual U.S. emissions of sulfur dioxide and nitrogen oxides. However, the acid-sensitive areas of northeastern and parts of northcentral Minnesota receive an average rainfall of Ph 4.6, 10 times more acidic than normal rain.

Between 2,500 and 3,700 of Minnesota's 12,000 lakes are potentially susceptible to acidification. Of these lakes, 500 to 1,000 are extremely sensitive to acid rain. To date, no lakes in Minnesota have acidified, but the acidity of rain and the sulfate deposition rate is now at or above levels which have caused acidification in Scandinavia, which is geologically similar to Minnesota. Recent studies have shown some lakes may be experiencing the initial effects of acidification, but more data is needed to confirm this.

Similarly, further study is needed to determine the effects of acid rain on Minnesota's fishing and tourism industry, agriculture and forestry.

We are proud of our reputation as a clean State. We have some of the strictest air pollution laws in the Nation. A recent study by the Conservation Foundation rates environmental protection by the State of Minnesota as No. 1 in the Nation.

In 1979 the Minnesota Pollution Control Agency, the MPCA, formed a statewide task force to investigate acid rain. In 1980 the North Star Chapter of Sierra Club worked for passage of the Acid Precipitation Act, mandating a 1-year acid rain study to be conducted by three State agencies, the MPCA; the Depatment of Natural Resources, and the Minnesota Department of Health. Under the study, research and monitoring programs were conducted to determine the effects of acid rain on Minnesota's resources. Sierra Club then worked with MPCA to pass the 1982 Minnesota Acid Deposition Control Act, requiring the MPCA to:

Identify areas of Minnesota sensitive to acid rain;

Develop an acid deposition standard designed to protect those areas;

Adopt an acid deposition control plan to attain and maintain the acid deposition standard, addressing emission sources within Minnesota and outside the State; and

Insure that in-State emission sources are in compliance with the acid deposition control plan.

Minnesota is continuing its leadership on acid rain control and monitoring programs as well, signing an agreement with Ontario to combine research efforts. However, Minnesota cannot deal with this important problem alone.

We need congressional action now to pass a strong acid rain bill requiring a 12-million-ton reduction in acid deposition, and we urge passage of a strengthened reauthorization of the Clean Air Act to control and prevent air pollution.

In October, Senator Durenberger introduced another acid rain control bill, S. 2001. We commend the Senator for taking a strong stand on the need for at least 12 million tons in SO_2 reductions. We recognize that it is more difficult for Republican Senators to openly break with the administration, which has yet to endorse any reduction program.

Senator Durenberger's bill would obtain 12 to 13 million tons of reductions over 10 years. In addition, it provides a unique system for financing a significant portion of the capital costs of installing technology to control SO_2 emissions. We believe Senator Durenberger is providing important leadership on this issue by steadfastly aiming at the 12-million-ton reduction goal and offering alternative means of achieving it.

Senator STAFFORD. Thank you very much, Carol, especially for that last paragraph.

Ms. BAUDLER. Thank you, Mr. Chairman.

Senator DURENBERGER. Give her another minute.

Senator STAFFORD. It is not so much a matter of breaking as trying to provide some leadership.

Senator Burdick, do you have questions?

Senator BURDICK. I would like to ask an immaterial question.

What are you doing about eutrophication in Minnesota? That is really affecting the lakes.

Ms. BAUDLER. We are trying to put in many stronger controls on water problems.

Senator BURDICK. That is really eating up the lakes in the western part of the State.

Senator DURBENBERGER. I would just like to make a comment and maybe put some of this into perspective.

First, I appreciate your being here and your individual statements.

When Carol mentioned about breaking with the administration, I know there are some people who feel this is all political. It really isn't. It really strikes me that we are dealing here today, and since I have been on this committee, in a larger context with the role of the National Government.

The other day I was writing a newsletter to my constituents about how we are going to narrow the deficit. I went back and looked at the fiscal yearend report from OMB and Treasury about what went up and what went down, and I was amazed to find out that it is not defense only that was going up, it was not social security only that was going up; there are a lot of things—salaries in the State Department went up 25 percent; the FSLIC and the FDIC went up 100 percent, banks and savings and loans. I could go on and on. The Nuclear Regulatory Commission went up. Lots of folks went up.

One of the groups that went down, besides the Corporation for Public Broadcasting and a few other things, was the Environmental Protection Agency. That used to be, I think, articulated in terms of somebody else can do it better than we can here. I got elected 5 years ago, and then reelected last year, on that premise that there are a whole lot of things that can be done better some place other than Washington.

I have been struggling with why I am here in the first place, other than am I here to abolish the National Government, and lately I have been giving a little speech on national purposes. I just want to read about four or five conclusions that I have come to which relate to everything that you have been talking about here, my theory being that until the National Government decides what our role is in meeting the needs of people in our society, we are not going to be able to use States, local governments, or the private sector, or anybody in any sensible way.

After I get through national defense and the economy, I have 10 purposes in total, but I am just going to articulate four or five of them here, which I label as effectiveness and efficiency purposes.

I struggle with the notion that just because a problem is widely experienced does not make that a national problem. We really see it in this committee on the public works side. Just because two out of every five bridges in America is defective does not mean the Congress has to act to build bridges.

Starting with that theory, I try to ask, well, what is it we should be acting on? One of these purposes is, I suggest, the National Government has the responsibility where significant savings can be realized by operating a central program.

Then I turn to research and development and I ask, why should we have 50 States doing research on acid rain, for example, when we can coordinate a research effort on the national level?

Or I could go to cancer, respiratory diseases, or whatever. That makes sense to me to be a national purpose.

Fifth, the National Government has the responsibility where effective intervention cannot be achieved by States acting alone. Now traditionally that has been the FBI. The criminals are fleeing across the State boundaries. Under that purpose, we created the FBI. Today we need it, as every one of you has articulated, for atmospheric pollutants.

Sixth, the National Government has a responsibility where significant benefits spill over to citizens in several States. Mr. Boyer made the point about the parks systems in New York, and so forth. We do a whole lot of wilderness protection and cultural heritage preservation in all our States. We really do it fairly well in Minnesota.

However, we can only do so much. When you realize that the benefits of what we do in Minnesota spill over into the whole Nation, or in New York, under that category, things like wilderness protection become a national purpose.

The next one, the National Government has a responsibility when national policies impose extraordinary costs on some States or regions of the Nation. I do not know whether our energy policy in this country is a policy or a nonpolicy, but I know that it is imposing extraordinary costs on some regions or some States in our Nation, not on others.

When my acid rain bill went in, all the boos came from west of the Mississippi River—you talk about smelters, and so forth.

The last one, the National Government has a responsibility when competition among the States keeps them from implementing programs that would make all better off. In a traditional sense, I usually use unemployment compensation because back in the depression only Wisconsin, of all the States, had the nerve to have an unemployment compensation tax to protect its workers, because they knew that by raising the cost of employing people with a tax businesses would leave Wisconsin and go someplace else. Society appropriately said, "That is the kind of protection that ought to be provided people at a national level."

Today Minnesota has taxed its people to control sulfur dioxide emissions. We have taxed our people in that State of Minnesota, to our disadvantage. If we start to tax them for toxic waste, and we start taxing them for a variety of other things, it will disadvantage employment in the State of Minnesota.

Therefore, if you are going to talk about a Nation addressing these problems, it seems to me that, where competition among the States keeps them from implementing programs that would make them all better off, we have a responsibility to try to make people better off in the sense of spreading this burden.

I thought I would just share those with you, so that in the future, as we debate these issues, you will at least know why I involve myself as a Senator in areas in which obviously States such as Minnesota and New York or Vermont are doing a lot more than perhaps other States are doing, but we cannot do it alone.

I appreciate your testimony very much. I understand that, to the degree that we have questions, they will be submitted to each of you in writing. I thank you very much for being here.

Ms. **GEERKEN**. Mr. Chairman, could I take just a moment to commend members to look at my illustration about what I mean about hazy days and clear days.

Senator **STAFFORD**. Oh, sure.

Ms. **GEERKEN**. Thank you.

[Ms. Geerken shows various photographs to members of the committee.]

Senator **DURENBERGER**. We now will hear from Dr. Thomas Godar, the American Lung Association; Mr. Ronald Hendrickson, Government Relations Director for the International Chiropractors Association; Mr. Thomas Kamstra, chairman, Regional Development and Natural Resources Committee of the American Institute of Architects.

We welcome all three of you. Your statements will be made a part of the record. If you can summarize them in 5 minutes or less, we would appreciate that a great deal.

Dr. Godar, please proceed.

STATEMENT OF THOMAS GODAR, CHAIRMAN, NATIONAL AIR CONSERVATION COMMISSION, REPRESENTING THE AMERICAN LUNG ASSOCIATION

Dr. **GODAR**. Mr. Chairman and members of the committee, I am Dr. Thomas Godar, director of the pulmonary disease section at St. Francis Hospital and Medical Center, Hartford, Conn. I serve as associate professor of medicine at the University of Connecticut School of Medicine and as associate of clinical professor of medicine at Yale, and am in the active practice of chest medicine.

As current chairman of the National Air Conservation Commission, I am testifying on behalf of the American Lung Association. The ALA is the Nation's oldest voluntary health association. We began by working for the control and prevention of tuberculosis and can trace our concerns about healthful air quality back to programs conducted by the New York City TB Association in the 1920's.

Today our mission encompasses the broad spectrum of the prevention and control of all lung diseases. These diseases constitute a devastating public health problem in the United States. Chronic obstructive pulmonary disease and lung cancer are the most rapidly increasing of all leading causes of death. We believe that a review of the scientific literature on air pollution demonstrates clearly the contribution of air pollution to the development and/or exacerbation of various lung diseases. It is on the basis of our knowledge of the adverse health effects of air pollution that the ALA places high priority on a reauthorization of the Clean Air Act, which will continue the progress toward clean and healthful air quality in all regions of the country.

The ALA has had the opportunity to present testimony on the Clean Air Act before this committee on two previous occasions. In recognition of the diversity of the concerns expressed in this debate, we will reiterate our emphasis on the public health concerns addressed by the act.

In our previous testimony we submitted for the record our publication, "The Health Effects of Air Pollution," which is a state-of-the-art review of the scientific evidence available on the contribution of air pollution to lung disease. Since publication of this document, the body of the evidence demonstrating health effects has grown considerably. The ALA has published a report reviewing recent research findings on sulfur oxides, and I would like to enter into the record this report entitled, "Sulfur Oxides and Public Health: Evidence of Greater Risks."

Senator **Durenberger**. Without objection, it will be made part of the record.

Dr. **Godar**. Thank you. [See p. 145.]

Quoting from the report, "Scientific journals report effects on pulmonary function from short-term exposure to sulfur oxide at 0.25 part per million and to sulfuric acid at 100 micrograms per cubic meter, leaving little, if any, margin of safety for protecting sensitive individuals."

We conclude that, "So much attention has been given to ecological effects—acid rain—that many have overlooked the effects on public health that this long-range transport poses."

We have previously commented on S. 768, first when it was reported from this committee in November 1982 as S. 3041, and in March 1983 when it was reintroduced.

We commend you, Mr. Chairman, and the cosponsors of this bill for preserving the public health principles in the act by retaining the provisions for health-based National Ambient Air Quality Standards and for the standard-setting process.

The NAAQS are the cornerstone of the act—that is, the Air Quality Standards—and have been the driving force responsible for the progress toward improving the quality of our Nation's air resources.

Retention of these provisions recognizes three essential concepts:

First, the standard must protect against adverse health effects in all population groups, including the paricularly sensitive subpopulations.

Second, the margin of safety is necessary to compensate for gaps in our knowledge about the effects of air pollution.

Third, the standard must be health based with cost considerations separated from the identification of adverse effects and the development of a protective standard.

A critical factor in the progress toward clean air has been the congressionally mandated deadlines to achieve the National Air Quality Standards. However, some areas subject to the act's 1982 deadlines failed to achieve the standards on time.

A small portion of the country subject to the act's 1987 deadlines are also expected not to achieve the standards on time.

S. 768 responds in a prudent manner by providing limited extensions where needed. We believe caution must be exercised to assure that only the minimum extra time needed for achieving the standards is allowed and that these provisions be explicit to prevent any "backsliding" in State air pollution control programs.

I would like to focus my remaining comments on provisions for the control of hazardous air pollutants.

There are very few people exposed to the hazardous pollutants compared to the criteria pollutants. However, their effect on human health is devastating compared to the low level chronic effects of ambient air pollutants that we know as the standard criteria pollutants.

Effective control of hazardous air pollutants is crucial for the protection of public health, and we believe the bill should strengthen section 112 by requiring that EPA identify 40 substances for which the Administrator shall make a decision to list as hazardous and include a schedule for the completion of the listing process.

We believe the provisions in this bill for control of hazardous air pollutants can be improved in three areas:

First, by accelerating the process for decisionmaking on listing substances.

Second, by clarifying that the best technology is required and as a minimum that standards should require each source to use controls at least as effective as the best already used by similar sources.

Third, by establishing a formal permitting process for cleaning up existing sources as well as new sources.

I have concentrated my remarks on the health effects of air pollution, which is the primary concern of the American Lung Association. We feel that a prudent public health policy can allow for no weakening of the act's current provisions. The Clean Air Act has led to substantial improvements, and we have to make considerably further progress.

Thank you very much.

Senator **DURENBERGER**. Thank you very much.

Mr. Hendrickson.

STATEMENT OF RONALD HENDRICKSON, GOVERNMENT RELATIONS DIRECTOR, INTERNATIONAL CHIROPRACTORS ASSOCIATION

Mr. **HENDRICKSON**. Thank you, Mr. Chairman.

My name is Ron Hendrickson, and I am appearing before you today on behalf of the International Chiropractors Association. I want to thank you for the opportunity to briefly present this committee with some comments regarding the Clean Air Act.

Logically, the Clean Air Act is not something that one would expect to be hearing from the chiropractors about. However, we asked for this opportunity out of a sense of responsibility to the people the chiropractic profession serves.

Unlike the decision to smoke tobacco, in the air that we breathe there is no freedom to choose. The quality of the air is indivisible and quite beyond the ability of any individual to control.

Our motivation for being here is a very simple one. How can we as health care providers say we have fully met the health care needs of our patients unless we address these greater issues, such as air quality, that are beyond the control of the individual, and apply the resources of our profession in the policy process that will determine standards of environmental quality?

The Clean Air Act of 1970 began a process of Federal involvement in air quality control that, together with the Clean Air Amendments of 1977, and the efforts of State and local authorities, has made great strides in improving air quality. We believe S. 768 is a worthy continuation of that responsible Federal involvement that has so far been successful in reducing harmful air pollution.

We are particularly mindful of, and grateful for, those members of this committee who have courageously resisted the temptation to relax auto emissions standards. While doing so may yield some short-term economic benefits to our Nation's automobile industry, the long-term consequences in both economic and in human terms make this a losing proposition. It is infinitely preferable to preserve the elements of good health than to treat the symptoms of ill health that result from the pollution of those elements.

My fellow witness, Dr. Godar, has ably and very technically provided information on the specific diagnosable diseases that result from air pollution.

One of the things that we have observed, as members of my association have reported, is the deterioration in the general feeling of wellness that accompanies conditions resulting from such things as air pollution, and the economic and the noneconomic costs of this general deterioration in a feeling of wellness are really immeasurable. To that end, we felt that we would step across our traditional areas of concern and comment to you on the initiatives put forth in S. 768, and thank you for the leadership that this committee has demonstrated in maintaining a strong Federal role in air quality control.

Thank you very much.

Senator DURENBERGER. Thank you very much.

Mr. Kamstra.

STATEMENT OF THOMAS A. KAMSTRA, THE AMERICAN INSTITUTE OF ARCHITECTS

Mr. KAMSTRA. Thank you, Senator Durenberger, Senator Burdick, members of your committee, and concerned citizens.

My name is Thomas Kamstra, AIA, and I am appearing today on behalf of the American Institute of Architects, the professional organization representing the Nation's architects. The institute very much appreciates your invitation to testify today on S. 768, the Clean Air Amendments of 1983. I am currently chairman of the AIA's Regional Development and Natural Resources Committee, and am a practicing partner of the firm Kamstra, Dickerson and Associates of Reston.

Although the AIA is vitally concerned about all aspects of air pollution, we are most directly concerned with two specific areas—indoor air pollution and acid rain or deposition. My testimony today concentrates in large part on these critical national problems.

Senator DURENBERGER. Lay off pipes.

Mr. KAMSTRA. OK.

Acid rain is one of the critical air pollution problems of our time. Its impact on the built environment is of particular importance to the architectural profession. We know the harm it can do—to our homes, our workplaces, our monuments, and our historic and cultural structures. Let me cite several examples of how acid rain wears away on our structures.

Reinforced concrete, used in the construction of roads, bridges, and commercial buildings, is highly susceptible to acid rain damage. Acid salts trapped below the surface of concrete can cause tremendous pressure within the concrete, in turn causing it to blister or peel off in layers. When this happens, the acid compounds then attack the reinforcing steel used with the concrete, weakening the structure.

Acid rain also harms copper and other metals by wearing away protective coatings found on those metals. We find that acid rain is most damaging to marble, limestone, and concrete, and, therefore, has a most serious impact on our statues and monuments as well as our structures.

On a more fundamental level, acid rain damages one of the building industry's most basic materials, timber, both here and abroad. The annual growth of forests in the United States has slowed considerably in areas with high levels of acid rain. I have attached for the committee's review a more detailed AIA analysis of the effects of acid rain on materials.

Senator DURENBERGER. It will be made part of the record.

Mr. KAMSTRA. Thank you. [See p. 181.]

Mr. KAMSTRA. To address the problems of acid rain in particular, the AIA favors a two-pronged approach—mitigation and continued research. The institute cannot support proposals that would delay efforts to reduce the amount of acid rain, pending further research, but instead we believe that both must proceed together.

The cumulative impact of acid rain, which will likely cause a more rapid determination of structures than experienced in the last 10 or 20 years, makes imperative an action program to combat such rain now. However, there is much yet to learn about phenomena such as the effects of acid rain on particular materials and the dynamics involved in the transport of damaging chemical compounds from one area to the next through the air. As a result, there is a need for continuing research to provide us with the knowledge to make the Nation's response increasingly effective.

The AIA believes that the pollution reduction goal of 8 million tons of sulfur dioxide over a 12-year period is too little over too long a period. We prefer reductions of 12 million tons over 10 years.

The AIA finds merit in the Federal-State relationship that S. 768 would establish to deal with acid rain. Permitting States to devise their own programs to reach their reduction targets allows them to tailor their responses to their own particular economic, environmental, and political conditions.

However, at the same time the AIA is sensitive to the need to assure that proposed State programs submitted to the Federal Government are rigorously reviewed to determine that the reduction targets will actually be met.

The AIA also recognizes that by placing in the hands of the States the major responsibility for attaining clean air objective S. 768 does not adequately address important economic consequences of acid rain mitigation strategies for States and localities which are highly dependent on the high sulfur coal industry

The legislation should also carry specific findings relating to the effects of acid rain on the built environment. Such findings are necessary to place into law the Federal Government's acknowledgment of the importance of taking action as soon as possible to reduce the damage that acid rain causes to buildings and other manmade structures.

S. 768 calls for reductions only of sulfur dioxide. Other measures permit States to substitute nitrogen oxide reductions for sulfur dioxide on a 2-to-1 basis. S. 768 also limits the acid rain mitigation area to 31 States. The AIA approves of limiting reductions to sulfur dioxide at this time. Insufficient information exists about nitrogen oxide to be certain that a tradeoff, as proposed in other legislation, will actually lead to mitigation of the most damaging form of acid rain to the degree desired.

While the AIA recognizes that the overwhelming amount of sulfur dioxide is produced in the 31 States covered under S. 768, the remainder of the 48 contiguous States should also be required to undertake efforts to reduce the production of sulfur dioxide within their boundaries.

Senator DURENBERGER. Are you near the end?

Mr. KAMSTRA. Sir?

Senator DURENBERGER. I think we have gone through the five minutes.

Mr. KAMSTRA. Oh, I am sorry. OK.

I have some other comments on the indoor air pollution, but I will submit those.

Senator DURENBERGER. That is the one I was worried about. I put my pipe away.

Mr. KAMSTRA. OK. There is nothing in there about pipesmokers.

Senator DURENBERGER. Thank you all very much.

Quentin, do you have any questions?

Senator BURDICK. Yes. What are you going to do about that indoor pollution? Do you have any recommendations?

Mr. KAMSTRA. Yes.

Dr. GODAR. Indoor pollution is probably going to be a more serious problem than we realized. Unfortunately, with the problem of fuel expense limitations, homes are tighter. As a consequence, there are probably significant indoor pollution problems, especially in the northern States, and especially in the winter months.

They are very difficult to study systemically because there are so many variables that have to be measured and controlled prior to reaching decisions with regard to certain critical levels of any given pollutant. Then if you add other variables such as supplementary heating sources—kerosene heaters, for example—the Lung Association is very concerned about them because we never know how much control there is in their application, or use, the complexity increased. Consequently, levels of significant pollutants can be very high—nitrogen oxides, CO_2, carbon monoxide—in certain homes, sufficient that in some school programs children have been found to have high levels of blood carbon monoxide, not from the school bus, one potential source, but in fact carried from the home where supplemental fuel sources are used and where the home has been well sealed to retain the heat.

This is a serious problem over which we have much less of a handle because the conditions are nonuniform.

Senator **Burdick**. I understand the problem, but what can we do about it?

Dr. **Godar**. Well, I think education of the public is perhaps one of the first places. That is where AIA intends to attack the problem, so that people, if they do install stoves or other systems, understand the the rules for their installation, and the potentials for health risks.

Senator **Burdick**. I think we will fight this problem through, but we will still have our smoke-filled rooms, I am afraid.

Dr. **Godar**. They are a tradition. I think I have to accept that.

Senator **Durenberger**. Thank you all very much. We may submit any additional questions in writing.

Our final witness will be Mr. V. J. Adduci, president of the Motor Vehicle Manufacturers Association.

STATEMENT OF V. J. ADDUCI, PRESIDENT AND CHIEF EXECUTIVE OFFICER, MOTOR VEHICLE MANUFACTURERS ASSOCIATION OF THE UNITED STATES, INC., ACCOMPANIED BY DR. FRED W. BOWDITCH, VICE PRESIDENT FOR TECHNICAL AFFAIRS

Mr. **Adduci**. Good morning, Mr. Chairman. Good morning, Senator Burdick.

I am accompanied today by Dr. Fred Bowditch, the MVMA vice president for technical affairs.

We appreciate the opportunity to present our views today. Our testimony today will outline several key areas where we believe legislative action is needed. Each of these areas is discussed in detail in the written statement which has been filed with the committee.

In the brief time available I can do little more than identify those areas, and I will discuss them in the order they occur in the Clean Air Act.

First, with regard to light-duty and then heavy-duty vehicles:

First is the automobile carbon monoxide emission standard. The CO emission standard for 1983 model year passenger vehicles is 3.4

grams per mile, which represents the statutory 90 percent reduction requirement.

The National Commission on Air Quality, the National Academy of Sciences, and the California Air Resources Board recommend that the passenger car standard be set at 7.0 grams per mile. California, which has the authority to set its own standards, has already established a 7.0 grams per mile CO emissions standard.

We believe the Clean Air Act should be amended to establish a CO standard of 7.0 grams per mile nationwide for passenger vehicles.

Second is the oxides of nitrogen standard for light-duty, diesel-powered automobiles. As you know, a Federal 1.5 grams per mile NO_x standard for light-duty, diesel-powered vehicles is more than adequate to meet the air quality needs. Such a standard would avoid increased particulate emissions as well as avoid the driveability and durability problems which would occur with the 1.0 gram per mile NO_x standard. California would retain authority to set its own NO_x standard.

High altitude standards are the third area. MVMA supports the altitude provisions of the Senate bill, S. 768.

Fourth are the heavy-duty truck standards. S. 768 would amend the act to strip the Administrator of his authority to amend the HC and CO standards from the fixed percentage levels established in the act. Unfortunately, we cannot support that approach.

Appropriate standards should be determined only after a public hearing. They should be based on a need for such standards to meet the National Ambient Air Quality Standards, with due consideration given costs, including fuel economy and maintenance and technological feasibility.

The fifth area is the definition of light- and heavy-duty truck useful life. Section 202(d) of the Clean Air Act should be amended to explicitly reaffirm that the half-life concept be applied in determining useful life for all classes of motor vehicles.

In the case of passenger cars, Congress had earlier interpreted "useful life" to mean one-half the total life. This half-life concept for light- and heavy-duty trucks has been endorsed by both House and Senate committees in their separate versions of proposed 1982 Clean Air Act amendments.

MVMA supports the provisions of S. 768 regarding useful life.

Another area deals with recall alternatives. It is in the public interest that any remedial action best serve the act's fundamental objective—to improve air quality—and be done in the most cost-effective manner.

The Clean Air Act should be amended to reaffirm and make explicit EPA's authority to exercise flexibility under the recall section to approve the manufacturer's remedial plan which makes the most sense from an air quality standpoint, including approval of plans requiring action by the manufacturer other than recall of the nonconforming vehicle class.

I would like to address some of the other provisions of S. 768.

The proposed light-duty NO_x standards are beyond the capability of current technology for diesel-powered, light-duty trucks, when coupled with EPA's stringent particulate standard.

For light-duty gasoline trucks, the proposed NO_x requirements would require the application of costly emission control systems. A determination of appropriate particulate and NO_x standards for the light-duty diesel truck and the NO_x standard for the light-duty gasoline trucks should be made the responsibility of the Administrator.

On diesel particulate standards, the committee bill would set by law final diesel particulate standards of 2 grams per mile for cars and 0.26 gram per mile for light trucks beginning in 1986.

These provisions would require particulate traps to be installed in all but the smallest vehicles. However, no durable system has been proved which will meet these requirements.

Furthermore, in 1982 a National Academy of Sciences study recommended that less stringent standards for cars and light trucks be considered.

In addition, earlier projections of a substantial rapid expansion of light-duty diesel sales have not materialized, particularly since gasoline prices have stabilized.

For the first 6 months of 1983, diesel car sales were 2.4 percent of the market compared to a high of 6.1 percent in 1981. In 1983, diesels accounted for about 7 percent of light truck sales.

Mr. Chairman, we believe the adjustments we are recommending will reduce regulatory complexity and costs without jeopardizing air quality progress.

We would certainly welcome the opportunity to assist the committee to the best of our ability with any additional information that may be needed, whenever a markup is scheduled on the Clean Air Act reauthorization legislation. We would be very happy to assist in any way we can, Mr. Chairman.

Senator DURENBERGER. Thank you.

I just have a couple of historical questions which I do not know the answer to.

Back in 1972 the administration proposed what they called the Pure Air Act, or something like that, which was a recommendation that pollutant emissions be taxed in some fashion. Did the association take a position on that in 1972? Do you recall?

Mr. ADDUCI. Do you remember? I wasn't with the organization then.

Dr. BOWDITCH. No, we did not. The matter did get to the point where the individual companies I think took a position on the matter. We had no position.

Senator DURENBERGER. Has there been any research within the organization or any of its members over the past 10 or 11 years since then about what impact a tax on emissions might have?

Dr. BOWDITCH. No, and I think in large measure it is because all of the standards for the mobile sources have been well prescribed by the act itself, and so the route of taxing emissions did not seem appropriate in the problem of mobile source emission. The industry, so far as we are aware, has not looked in any degree into the possibilities of some sort of emissions tax.

Senator DURENBERGER. It would appear to me that the way the process works, as I was listening to your testimony, there is a focus somewhere here or at EPA looking at what technology is available out there in the marketplace, and then backing away from available technology, what I guess you called best available control technology, or I will call it that. We back away from whatever your members are delivering to us in the way of technology and say 3 grams per mile.

That is sort of the way the process has worked, I take it. It has been sort of a tension against the economics involved and the technology against what that is capable of producing, and somewhere in between the standard is adopted. That becomes, for some period of time, a national standard.

Dr. **Bowditch**. All of the things that we talk about here are still related back to the National Ambient Air Quality Standard itself, which some of the previous witnesses have addressed as well.

We understand and agree that that is a rational process. We do not disagree with the approach at all. You will notice in each of the things that we have proposed we believe, and our full statement elaborates on the fact that we will still be meeting the National Ambient Air Quality Standards in each of these instances, despite what we are proposing here in the way of some changes in the current act. We are not minimizing the importance of meeting the Air Quality Standards. We are agreeing with that, and we are saying that now that we have reached the point of 90 percent reductions, which we have had in passenger car emissions, maybe we now can look at the expense of some of these things which are over and above that which is necessary to meet the Air Quality Standards.

Senator **Durenberger**. Have you any idea, Doctor, how much in dollars is committed or has been committed over the past 10 years to research and development in control technology?

Dr. **Bowditch**. It has been millions of dollars, and we do have those figures. I do not happen to have them at my fingertips.

Right now the purchaser of a new car spends something in the order of $700 for the equipment that is on his car that has been put there strictly for emission control.

Senator **Durenberger**. Isn't that, in fact, largely responsive to a standard that has been set—and some determination about what emissions are OK and which are not, and so forth?

Dr. **Bowditch**. That has been in response to the requirements in the Clean Air Act.

Senator **Durenberger**. I wonder if you would help us explore for the record—you do not have to do it now—the issue of how much money is devoted to coming up with a technology to meet a standard versus how much money might be put into—if you did not have a standard but you had a sense that there were benefits in reducing emissions—into the appropriate kinds of research that would take it down to as close to zero as you could get. I know that is not the way we usually operate around this place. That is not the way your industry or any other industry would operate, but I am curious, for one, whether or not we may be in some way by setting these standards an impediment to more practical, basic research in the industry on control technology for those emissions that come from mobile sources.

Dr. **Bowditch**. We will be happy to furnish it for you.

Senator **Durenberger**. I may be able to refine that question a little better to give clearer direction, too, given a little time.

[The information requested follows:]

MOTOR VEHICLE MANUFACTURERS ASSOCIATION
OF THE UNITED STATES, INC.,
Washington, D.C., December 16, 1983.

Hon. ROBERT T. STAFFORD,
Chairman, Committee on Environment and Public Works, Dirksen Senate Office Building, Washington, D.C.

DEAR SENATOR STAFFORD: On November 15, 1983, the Environment and Public Works Committee held a hearing on S. 768, the "Clean Air Act Amendments of 1983." MVMA testified at that hearing.

During the Q and A Senator Durenberger asked that we supply "for the record" an answer to the following question.

"Would it be better to develop technology to bring emissions down as much as possible than to develop technology in order to meet a particular standard? In other words, is the setting of standards an impediment to basic research on developing the best possible control technology?"

Our response follows:

"The first step in the establishment of emission standards should be the positive determination of the ambient level of the pollutant in question that must be attained to protect the public health. Basic and applied control research can then be initiated to determine the control hardware needed to attain that ambient level at the optimum combination of cost, technological efficiency and cost-effectiveness. To prescribe control equipment to attain an ambient pollutant level more stringent than necessary to protect the public health represents a needless and intolerable waste of human and financial resources by both the regulator and the regulated.

"We have never had the luxury of doing the basic control research before we have had to meet emission standards. The legislative philosophy has been to set standards at levels exceeding control technology, and then relent only if technology cannot be developed at the last minute. This has led to real brinkmanship development and planning for the manufacturers—certainly not the way to ensure the best control hardware at the least cost to the general public. A much better procedure, better hardware at less cost, would be to set standards after the basic research is completed so that sufficient time is available to tailor the control hardware to individual car lines."

Thank you again for the opportunity to testify at the Committee hearing. I look forward to working with you on this important legislation.

Very truly yours,

V. J. ADDUCI.

Senator DURENBERGER. Senator Burdick.

Senator BURDICK. Mr. Chairman, I would pursue the subject you have opened here.

The testimony shows that you say there is $700 that goes into the cars to take care of antipollution devices, things of that nature?

Dr. BOWDITCH. Approximately. That varies some, of course, between models and manufacturers.

Senator BURDICK. I think it is a known fact that a car that is equipped with these antipollution devices does not get the mileage that a car without them does get. Isn't that true?

Dr. BOWDITCH. It does not quite, although it approaches it. There are some penalties, yes.

Senator BURDICK. Isn't this an area for exploration to find out how you can get better mileage from the better fuel?

Dr. BOWDITCH. We obviously are working very, very hard at that job, and we have made tremendous improvements in fuel economy in the past 2 years, but there has been some penalty. We would, indeed, have had somewhat higher fuel economy had we not had to meet these emissions standards.

Senator BURDICK. I have heard stories, though I cannot point to any in particular, where these antipollution devices have been ripped off merely because they feel they can get better mileage without them.

Dr. **Bowditch**. The only reason we do not get as high a fuel economy as we might today is because we cannot go to the higher compression ratios that we used to be able to use. Higher compression ratios mean higher efficiency. We cannot do that any longer because we do have to use an unleaded gasoline that does not have the octane quality.

However, in terms of all of the rest of the performance of the vehicle, in terms of the most optimum things like spark timing and the rest of it, we are able to do today, with the kinds of equipment that we are able to put on the cars, with all the electronics and the catalytic converters, and all the rest of it, but there is this one part of the design that we cannot take advantage of these days, and it has to do with compression ratios.

Senator **Burdick**. It seems to me that is your challenge—to keep the antipollution devices and get better mileage.

Dr. **Bowditch**. We recognize it, and we will take it under advisement again, Senator.

Senator **Burdick**. That is good.

Thank you.

Senator **Durenberger**. I want to finish up. I was clarifying by reference here, and I think we are both getting at the same thing. It again goes to the theory and the value of the way we invest in control technology.

It is my understanding that we, meaning the Government and you all—we did not write air quality standards that prompted somebody to invent the catalytic converter. We looked out there and the best available control technology was the catalytic converter. So, in effect, we created air quality standards that brought us the catalytic converter.

Now, if that is going to be the future, if that is sort of our future relationship between the economy and the Government, then if I were General Motors, it seems to me I would not be investing research money in improving in any substantial, way on the performance of catalytic converters, because I would be afraid that if I made it better, then all of a sudden there would be new performance standards adapted to that new technology. Isn't that sort of the way the system has been working in the past?

Dr. **Bowditch**. No, Senator. If you will excuse me, it has really worked in the reverse manner. It was one of the premises of the Clean Air Act when it was first enacted as a Federal requirement, and it was a technology-forcing approach to the problem. We did not know anything about catalytic converters when the act first went into place. Those had to be developed.

The standards we meet today, we did not know how to do some of this hardware, some of these electronic tricks, if you will, that we know today—we did not know how to do them 4 or 5 years ago. It was a matter that we were being—technology was being—forced. It is the history, I think, of the Clean Air Act and Congress in total that it has been in that mode. It has not been a matter of first waiting for the hardware to be developed and then the requirements that the hardware be placed on all cars, but rather the reverse happened. We had the standards first, and we had to develop some kind of method of meeting those standards.

Senator **Durenberger**. Very good. Thank you.

Senator **Burdick**. I have one curious question. Is there any hope in the electric car?

Dr. **Bowditch**. The electric car's future has had its ups and its downs certainly. At the current moment, with the energy crisis reasonably well stabilized, at least as far as gasoline is concerned, there does not seem to be the reason for the development of the electric car that there was a matter of a few years ago.

You have to remember where that electricity is coming from, after all. It could easily come from petroleum products, just as the current gasoline is required to do the job. There is somewhere that the electricity has to come from. If we are going to generate it with the same petroleum products that we end up making gasoline out of, we really do not save much of anything.

Given the current energy situation, there does not seem to be the interest in the electric car that there was when there was concern that gasoline prices might be two or three times the current level.

Senator **Burdick**. Thank you.

Senator **Durenberger**. Thank you very much. We appreciate your testimony.

The hearing is adjourned.

[Whereupon, at 12:07 p.m., the committee adjourned.]

[Statements submitted for the record and the bill, S. 768, follow:]

ACID RAIN, HAZARDOUS AIR POLLUTANTS AND THE CLEAN AIR ACT. AMENDMENTS

Testimony of

ROBERT ABRAMS, ATTORNEY GENERAL
OF THE STATE OF NEW YORK

Before the

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

November 15, 1983

I am Robert Abrams, Attorney General for the State of New York. I am also currently serving as chairman of the Environmental Conservation Committee of the National Association of Attorneys General. Today I am appearing in my capacity as the State's chief legal officer and head of the New York Department of Law.

I wish to thank the members of the Committee for this opportunity to address the issues arising from the proposed Amendments to the Federal Clean Air Act. The Committee should be commended by all for the fine work it has done in the development and presentation of Senate Bill 768, entitled "Clean Air Act Amendments of 1982". It is unfortunate that the full Congress has not yet followed the Committee's lead in passing this Bill. Nevertheless, reconsideration of this Bill in 1983 and 1984 gives us the opportunity to recommend certain changes in the Bill which would increase its effectiveness to protect the Nation's health and environment.

Among the many issues surrounding the Bill, I will address today only three matters of utmost concern to the people of New York, and the nation as a whole. These are the problems of Acid Rain, hazardous air pollutants and interstate air pollution. These are problems which my office has devoted substantial efforts in administrative proceedings, federal court cases, and previous testimony before this Congress. In particular, my office, in cooperation with other northeastern state Attorneys General and private environmental groups, has pursued a litigation campaign to force full implementation of the 1977

Clean Air Act Amendments dealing with long range, interstate air pollution and acid rain. We have also filed several federal court actions that have been successful in forcing the Environmental Protection Agency to promulgate emissions standards for arsenic and Polycyclic Organic Matter (POMS).

Despite some gains in these areas, however, the experience in the Courts and Administrative agencies under the existing Clean Air Act has been disappointing. Some of our efforts to prevent increases in acid rain and to reduce interstate air pollution have been frustrated as a result of weakness in the current law. Even our successes in the areas of hazardous air pollutants and tall stack regulations have underscored the slowness and inadequacy of the pollution control mechanisms of the existing law. In these areas, the current Clean Air Act appears unable to prevent severe environmental and health damages, and an overhaul is desperately needed. My testimony is directed at recommendations for accomplishing this task via Senate Bill 768.

ACID RAIN

a. Emission Reduction Goal

New York suffers heavily from acid rain damage. This is due to its location in an air transport corridor which brings large quantities of sulfur and nitrogen pollutants from the high emission density regions of the midwest. Pronounced damage also occurs by reason of large areas of highly sensitive soil and water resources in our unique Adirondack Park, Catskill Park and Hudson Highland areas. New Yorkers also suffer severe health damages associated with acid rain. This is because the acid rain precursors, in the form of fine particles of sulfate and nitrate attack the lung systems of our people. The Committee's 1982 Report quoted a study which estimated that a 30% decrease in overall sulfur dioxide emissions in the U.S. and Canada by the year 2000 would reduce the number of excess deaths due to air pollution by 17,000.

Senate Bill 768 addresses the problem by mandating an eight million ton emission reduction, supplemented by a requirement that any future emission increases be off-set by reductions in pre-existing emissions.

The Senate Committee's Report in 1982 described this as "the minimum amount needed to protect the most, but probably not all lakes and streams." This amounts to a 35% reduction in the 1980 level of emissions in sulfur dioxide.*

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* Government Accounting Office "Analysis of the Acid Rain Proposal approved by the United States Senate Committee on Environment and Public Works on July 22, 1982, September 24, 1982, page 1."

Since the date of the Committee's action, the National Academy of Sciences published its long awaited and definitive analysis of the acid rain problem. The Academy concluded that a 50% reduction in acid deposition is needed to prevent the damages. The report further concluded that a 50% reduction in sulfur dioxide emissions in the eastern United States would achieve this goal.

For these reasons, I respectfully urge the Committee to increase the tonnage reduction goal in Senate Bill 768. Several estimates have been made to show that a 12 million ton reduction in sulfur dioxide emissions would achieve the 50% emission reduction goal. In March, 1983, Senators Stafford and Hart introduced a bill calling for a 12 million ton reduction. Senator Durenberger's bill also calls for an emission reduction greater than SB 768.* I urge the Committee to adopt the 12 million ton emission reduction goal into SB 768 and to urge its passage by Senate as a whole.

b. Jobs And Coal Production Effects

An important consideration in the passage of any acid rain legislation must be the effect of its provisions upon jobs and coal production in the United States. Large emission reductions can be achieved either by large scale shifts to lower sulfur fuels, by installation of emission control technology at the largest sources, or by a combination of the two.

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* Senate Bill 769

It is generally accepted that the cheapest method of achieving large emission reductions is by fuel switching. Major sources of sulfur dioxide emissions, such as coal fired electric utility plants, could achieve large reductions in emissions simply by purchasing, at higher costs, lower sulfur coal. Thus, the reduction could be achieved without expensive changes in equipment or capital costs. This would entail a shift in purchases away from the high sulfur producing regions of the upper midwest, to the low sulfur coal production regions of the mid-appalachian states and far west. Although the total number of jobs in the coal industry is not effected, the resulting shift in production could displace many thousands of jobs from one region to another and result in some economic disruptions.*

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* See, Report of the Committee on Environment & Public Works, United States Senate, to accompany S.3041, page 73.

Senate Bill 768 places no restrictions on the manner in which pollution sources must attain their emission reduction requirements. Consequently, it is expected that most of the reductions will be achieved by fuel switching. At page 73 of the 1982 Senate Committee Report it is estimated that 1990 coal mining employment levels would fall 33% in the mid-western states of Illinois, Indiana and western Kentucky. Lesser employment losses are forecast for the Appalachian states of western Maryland, northern West Virginia, Ohio and Pennsylvania. Employment increases are forecast for the central Appalachian states of Tennessee, Virginia, eastern Kentucky, southern West Virginia and the western coal producing states.

I believe that the nation as a whole must be very concerned about these job and coal production shifts. Although the impact of these effects will be cushioned by the long lead time provided in the Senate Bill, the impacts will nevertheless be quite severe on some communities. I believe the nation as a whole has a significant interest in avoiding this sort of economic disruption. Over the past decades, we as a nation have invested huge amounts of economic and human resources in developing the high sulfur coal production infrastructure. This development is accompanied by patterns of economic life essential to many communities in those areas. All of us have seen the disastrous effects of unemployment in this nation, and we must be sensitive to the fact the requiring large numbers of coal miners to relocate in areas far from their homes imposes a significant human cost which is difficult to express in economic terms.

In order to be sensitive to the interests of these communities and people, I urge the Committee to amend Bill 768 to add a requirement that a large percentage of the total emission reduction goal be required to be achieved through technology controls. The technology controls could include the construction of Flue Gas Desulfurization units (scrubbers) at existing power plants, possibly in connection with construction of sophisticated chemical coal washing facilities at coal mining installations, or construction of newer emission control technologies such as fluidized bed combustion units or limestone injection multi-stage burners.

A proposal of this sort is contained in the Bill of Representatives Sikorsky and Waxman. House Bill 3400 requires that seven million tons of emission reductions be achieved through technology controls. While this would not entirely eliminate fuel switching it would help to avoid massive coal production shifts and job dislocation. Consequently, the chances of passage of a comprehensive Acid Rain Bill in the House has been increased dramatically.

We must all recognize that the cost to the nation of requiring technological controls is higher than other proposals.* I firmly believe, however, that this cost can and should be born.

c. Cost-Sharing

It is uncontroverted that a large percentage of the needed emission reductions must occur in the mid-western states. Until recently it has been assumed that the simplest and most equitable means of assigning pollution control costs is to require the polluter to pay. The mid-western states have traditionally enjoyed relatively low electric costs. This is because of their use of inexpensive high sulfur fuels and the widespread absence of any meaningful sulfur dioxide emission limitations. In contrast, the northeast states have developed stricter emission limits and have opted for more expensive oil and gas fired generators and lower sulfur coal use. Although the move toward coal is increasing in the northeastern states, many states, including New York, are determined to hold the line or sulfur emissions. Recently the New York Department of Environmental Conservation approved the conversion of two large New York City power plants from oil and gas to coal fuels. Importantly, these conversions will only be allowed if the company will install flue gas desulfurization units to minimize emissions.

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* One Congressional study estimated that the cost of a 8-9 million ton emission reduction without a technology requirement would be $3.1-$3.8 billion per year (1982) dollars. In comparison, a bill requiring the technology controls provided for in Waxman Sikorsky would cost $4.3 - $4.8 billion per year. Office of Technology Assessment, "An Analysis of the Waxman Sikorsky Acid Rain Control Proposal", June 21, 1983, Table 5.

The inequities of the current situation are apparent. The northeastern states are paying high prices in order to preserve clean air while they are being inundated by pollution generated by the low cost power production of midwest industry and utilities. These circumstances must be changed, and in doing so it is essential that much of the cost of these emissions reductions be born by the polluters themselves.

There are other considerations, however, which necessarily temper this position. We in the northeast states need these emission reductions as soon as possible. The Congress should not allow another year to pass without enactment of a comprehensive acid rain bill. To put this off beyond 1984 is unconscionable. Time is of the essence for New York and other states whose land and people have been damaged by acid rain and its precursors. In addition we now know that vast areas of the Southern, Mid-appalachian, upper Mid-west and even the Rocky Mountain and Pacific states are threatened by this problem. Moreover, only a large emission reduction, on the order of 12 million tons, will fully protect our people and their environment.

The fulfillment of this urgent need for passage of a bill requiring such a large emission reduction, however, appears to have been blocked by concern over the impact on Mid-western electric rates. It may become apparent in the next months that agreement on a bill within the Senate or between the Senate and House is not possible without some type of cost sharing provision. If this is the case, then I believe our need justifies support for a compromise bill containing a limited cost sharing mechanism in conjunction with a 12 million ton reduction requirement.

There are several mechanisms by which this can be achieved. Some have proposed a national tax on electrical generation to establish a trust fund to finance installation of technological controls on the 50 largest utility power plants. Such a scheme, contained in the Waxman-Sikorsky Bill (H.R. 3400) would still require the midwestern states to bare large portions of the pollution control costs. For example, 10% of all capital costs, as well as all of the operation and maintenance costs throughout the life of the equipment must be born by the polluter. In addition the trust fund would cover only about two thirds of the emission reduction requirements. Each state that is required to achieve additional reductions will have to pay for such costs without aid of cost sharing.

Another approach is to tax emissions of sulfur dioxide and nitrogen oxide, such as been proposed in Senator Durenburger's bill. Although this approach in principal is a good one, our experience shows that there are substantial administrative difficulties in implementing such a tax. The current inventories of sulfur dioxide and nitrogen oxide emissions, especially for non-utility sources is poor. The collection of such tax would be difficult and would necessitate a large commitment in terms of enforcement and compliance personnel.*

A third approach is to tax electrical generation at a graduated rate depending upon each source's total pollution emission rate. Under this proposal the largest polluters would pay a bigger tax than sources that are relatively well controlled. This approach would be applied solely to utility sulfur dioxide emissions, and for this reason is somewhat more workable than a straight emission tax. Utility emissions of sulfur dioxide are easier to determine than non-utility sources' emissions and it eliminates the extremely difficult problem of measuring nitrogen dioxide from all sources. This would, however, require a greater enforcement and surveillance effort (including a greater amount of fuel sampling) than would be required by a simple electric generation tax.

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* See Office of Technology Assessment, "Tax Strategies to Fund Acid Rain Control", a staff memo prepared by the OTA Oceans & Environment Program, August 23, 1983.

Several recent analyses have shown that the effect of such tax proposals would not be great in any one state.* We must further recognize that the nation as a whole will benefit from the reduction of acid rain and the health damages associated with high concentrations of fine particles in our breathing space. Nationally it is estimated that we experience at least 7 billion dollars annually (1978 dollars) in acid rain damages and this figure does not account for many injuries which are hard to quantify in economic terms, such as human suffering, loss of precious lakes, vistas and wildlife.** The nation as a whole will also benefit by avoiding the economic disruption associated with large scale job and coal production dislocation. The creation of the Tennessee Valley Authority and the national investment in costly water and power projects in the western states are but two examples of the national benefits which accrue from federal solutions to regional problems. I believe that in the interest of a speedy and effective solution to the Acid Rain problem, a limited cost sharing program would be acceptable to states in the Northeast and elsewhere. Such a program has already been supported by the Governors of Minnesota, Wisconsin, Michigan and Massachusetts. A recent survey of New England Congressional members indicated support for some type of cost sharing plan.*

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* For example, in New Mexico the average residential customer used about 493 kilowatt hours of electricity per month. A tax of one mil per kilowatt hour would raise the average utility bill ($34.19) by about $.49. This represents only 1.4% of the total bill and adds up to a yearly cost of $5.42 per customer. The above is based on data for investor owned utilities as reported in the 1982 Annual Report, New Mexico Public Service Commission.

** The Report of Committee on Environment & Public Works, supra at page 61, cited a study of Dr. Crocker placing the damage figure at $5 billion in 1978 dollars. The same figure in 1982 dollars is $7.03 billion. Wilderness Society, Report on the Effects of Acid Rain of Forest-Crop Resources in the Eastern U.S., September, 1983, page 15.

In my own State a recent poll conducted by researchers for the State University of New York at Albany, and the New York State Department of Environmental Conservation showed that New Yorkers are overwhelmingly in favor of comprehensive acid rain controls even if it means an increase in their electric bills.**

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* See Reports from Inside EPA, August 5, 1983 and October 21, 1983.

** Institute for Government and Policy Studies, "The Economic Impact Study of Acid Precipitation", June, 1983, State University of New York at Albany, Part B, pp. 13-19.

A Congressional office has reported that a one mil per kilowatt hour tax on New York (as proposed in HB 3400) would increase rates by only .8% (or about 40 to 60¢ per month for the average residential customer).* I suspect that this may be representative of public opinion in most parts of the nation, and particularly in the northeast states.

In New York State my office has consistently fought for the utility consumer by opposing unjustified increases in electric rates. Even with this high sensitivity to the interests of the consumer, I believe that the environmental and health benefits to be derived from obtaining speedy passage of a bill requiring a major reduction in acid rain make acceptable a small increase in rate payer costs in New York and elsewhere.

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* Office of Technology Assessment, "An Analysis of the Sikorsky/Waxman Acid Rain Control Proposal", June 21, 1983, a staff memo prepared by the Oceans & Environment Program, Table 6.

HAZARDOUS AIR POLLUTANTS

I strongly support the Committee's basic provisions addressing hazardous air pollutants. The bill contains one absolutely essential reform: the firm requirement in Section 122 that forty pollutants be studied and regulated, if necessary, within a definite time frame. The present Act requires the agency to make decisions which are highly charged politically and economically. EPA has been stymied by this burden. Thirteen years of experience have taught us that EPA is unable to pace its regulation of hazardous air pollutants. Congress must therefore specify an adequate rate of regulatory performance by EPA. The new Section 122 will relieve EPA of the choice whether or not to regulate and thereby give it greater freedom to do so.

I also endorse the Committee's adherence to the "margin of safety" goal of Section 112. The Reagan Administration has refined its earlier push for broad cost-benefit analysis and now presses for balancing risks of cancer deaths with costs to industry as a new basis for Section 112 standard. This approach suffers from gross technical limitations as a regulatory methodology. Moreover, to adopt it would be to abandon the public health values which now inform the Act. The "margin of safety" standard requires EPA to seek the greatest possible protection for the public health. This essential value should remain at the heart of the Section 112.

Finally, I would like to propose some additional language which is appropriate in light of the bill's incorporation of economic factors into Section 112.

New York's Experience Under Sections 112 and 122 of the Clean Air Act.

New York has special reason for concern about hazardous air pollutants. New York's urban and industrial areas suffer from pervasive local toxic air pollution comparable to other metropolitan areas across the nation. In addition, New York City and Long Island are immediately downwind from New Jersey's industrialized north. An extraordinarily high concentration of petroleum refineries, organic and petrochemical industries, smelters and pharmaceutical manufacturers are located in this region.

EPA has detected seventy-three different organic compounds in the ambient air in Newark, New Jersey. Similar numbers of organic compounds have been detected in Staten Island.* Air quality monitoring performed by New Jersey has confirmed the presence of many hazardous chemicals in northern New Jersey air, including six heavy metals, eight polycyclic aromatic hydrocarbons and seventeen of twenty volatile organic substances.**

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* Parts of Texas, West Virginia, California, and Missouri have also exhibited concentrations of hazardous air pollutants. Pellizzari, E.D., "The Measurement of Carcinogenic Vapors in Ambient Atmospheres," report prepared for the Environmental Sciences Research Laboratory, U.S.E.P.A., Research Triangle Pk., N.C., 1977.

**"Second Report on the Findings of the State Monitoring Program for Heavy Metals and Polycyclic Aromatic Hydrocarbons in Ambient Air in New Jersey" and "Second Report on the Findings of the State Monitoring Program for Volatile Organic Substances in Ambient Air in New Jersey." Office of Cancer and Toxic Substances Research, N.J. Dept. of Environmental Protection, 1980.

These studies are alarming, yet they do not even purport to identify all of the hazardous pollutants emitted in the New York metropolitan area. There is no doubt that emissions from northern New Jersey contain a wide variety of carcinogenic, mutagenic, teratogenic and otherwise toxic air pollutants. This mixture of pollutants is regularly distributed across the five boroughs of New York City and Long Island by the prevailing meteorological conditions.

As Attorney General of New York State, I have instituted litigation to push EPA to regulate those hazardous pollutants of concern to New Yorkers, which Congress directed EPA to control. The limitations of the federal law and of EPA's performance have hampered these efforts. However, New York has successfully sued EPA twice under Sections 112 and 122, compelling it to promulgate regulations controlling arsenic and to reach a decision regarding polycyclic organic matter (POMS).* We have also urged EPA to issue benzene regulations.

EPA's handling of arsenic emissions has been quite disturbing. In 1977 Congress directed the agency to determine within one year whether or not to regulate arsenic emissions. EPA took three years to formally declare that inorganic arsenic causes cancer in human beings. It found that there is significant public exposure to inorganic arsenic: three million Americans were exposed in 1974 to above-average arsenic concentrations. Smelters, pesticide manufacture and use, combustion of fossil fuels, the lead alloy industry, glass manufacture and cotton ginning were declared the major sources. 45 Fed. Reg. 37886, 37887, (1980).

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* State of New York v. Gorsuch, 554 F.Supp. 1060 (S.D.N.Y. 1983); State of New York v. Gorsuch, Civil Action No. 82-4695 NJL, order entered June 3, 1958.

A year and a half later, EPA informed my office that it was considering regulating only one company emitting arsenic. New York then took EPA to court, where it claimed it would need until 1986 to regulate any sources. This position was particularly disturbing in light of EPA's acknowledgement that the ASARCO smelter in Tacoma, Washington, was emitting very large quantities of arsenic and that some necessary controls for that plant had already been identified. It is truly a scandal that these controls still have not yet been implemented. In the arsenic case EPA claimed that it needed more time to eliminate uncertainty. EPA wanted to further refine its data on the health effects of arsenic, the levels of public exposure and the economic effects on industries which might be regulated.

Because of the clear deadlines now in § 112, New York prevailed in its federal mandamus action and EPA has finally proposed arsenic controls. The proposed standards ignore all of the sources which are of immediate concern to New York and blatantly substitute this Administration's legislative proposals for the Act's standards. However, at least EPA has taken the next step. And it has proposed long overdue controls for the Tacoma Asarco smelter and for plants in two other industrial categories.

Mandatory Promulgation of Standards

It is only because Congress set firm deadlines in Section 112 that EPA moved at all on arsenic. GAO has recently reported on EPA's behavior under § 112. The most striking finding of this study was the fact that EPA itself has frequently shifted from one policy to another and from one pollutant to another. This has caused enormous expense and delay in regulating any hazardous air pollutants. "Delays in EPA's Regulation of Hazardous Air Pollutants," GAO/RCED-83-169, August 26, 1983. EPA must be compelled to follow through on one regulatory approach. If it does so, real progress can be made in controlling toxics in our air.

Final answers to all of the technical questions will not be found in the foreseeable future. EPA will always be vulnerable to some criticism of its regulations. However, there is no shortage of pollutants which should be controlled on the basis of the substantial damning evidence at hand. This is why it is essential that Congress relieve EPA of the choice of deciding whether to go ahead with regulations or not. In spite of some continuing uncertainty, Congress must make the decision to regulate and how soon to regulate.

Two federal courts have upheld the Act's present timetables in the face of EPA's argument that it needs more time to study proposed regulations. State of New York v. Gorsuch, 554 F.Supp. 1060 (S.D.N.Y. 1984); Sierra Club v. Gorsuch, 551 F.Supp. 785 (N.D. Calif. 1982). The courts found that Congress had already taken into account the uncertainties inherent in regulating toxic air pollutants, but had expressed its desire that EPA move ahead anyway. These decisions were clearly correct, as is this Committee's decision to tighten the requirements on EPA.

A Margin of Safety for the Public's Health.

The margin of safety concept incorporates a basic goal which the Act should retain: standards must protect human health to the greatest possible extent. The Reagan Administration proposes to compromise this aim by shifting the basic regulatory function under Section 112 to a balancing of certain health risks with the costs of controls to industry. While risk assessment may appear to be a scientific and logical approach to management of toxic regulation, it is actually a diversion from the regulatory task at hand. Many resources are being devoted to this most recent shift in policy on toxic air pollution. Meanwhile Americans continue to inhale harmful substances.

A risk assessment is a model or formula which describes a pollutant's impacts in the environment. Each of the elements of the model is itself an estimate. The amount of air pollutant emissions, the rate of the chemical's survival in the atmosphere, the extent of geographic dispersal, the number of humans it may contact, the effects of different forms of contact (e.g., skin contact, inhalation, direct ingestion, ingestion in plant or animal tissue, etc.), the possible range of individuals' responses to the contact, the synergistic and the cumulative effects of the chemical--these can only be estimated within a wide degree of uncertainty. Indeed, in the arsenic case, EPA acknowledges that its risk analysis ignored most of these factors. 48 Fed. Reg. 33115 (1983). By its terms, risk assessment is little more than a shot in the dark. The debate on its value is handicapped by a gross lack of data which cannot be remedied.

Assessment of risks of deaths is no more scientific or certain than current methods of setting priorities. The result of even a thorough risk analysis is a number, but it is not a specific or certain number. It gives us no more than we have now--a broad threshold at which undesirable effects may occur. EPA must still decide at what level to set standards.

EPA staff is also embroiled in a debate over the the adequacy of EPA's overall exposure estimates. It is clear that EPA significantly underestimates population exposures and their health impacts. The synergistic effects of arsenic with other pervasive pollutants has been completely ignored. These aspects of the regulatory process are being refined by the agency experts. It is crucial that Congress continue to set high aims for the nation's air quality to guide EPA's efforts. The margin of safety goal of section 112 should be retained.

Guidelines for Technology Based Standards

The Committee's bill sets Section 112 standards for determining appropriate control technology, explicitly incorporating economic factors and agency discretion in identifying and categorizing sources. These revisions must be carefully crafted so that they do not open the door to abuses of Section 112's goals.

EPA's proposed arsenic standards illustrate the many ways Section 112 can be defeated by superficial or indulgent assessment of the control technologies "available" to industry. In proposing arsenic standards, EPA has seized on numerous excuses for not regulating sources or for accepting that current levels of control are adequate. EPA did not provide factual support for many of these decisions. For example, EPA presented no data to support its conclusion that secondary lead smelter flue dust handling, of particular concern because of the high arsenic content of the dust, is "well controlled at most smelters." 48 Fed. Reg. 33119-20 (1983).

In the arsenic proposal EPA also broadly assured the public that, if arsenic sources comply with other regulations, such as SO_2 and particulate SIP requirements and OSHA regulations, enough arsenic will be caught that Section 112 goals will be met. Technical justifications for this assumption are incomplete. Indeed, with respect to arsenic from secondary lead smelters, EPA relies on lead SIPs which are yet to be written by state agencies. This passive approach fails to afford the public the health protection which section 112 now mandates.

EPA's use of economic considerations in the arsenic case is totally unexplained. EPA did not indicate what level of economic hardship it considers sufficient to preclude regulations, what standards it has applied or what financial information it has relied upon. EPA also relied on general assertions of economic vulnerability in the subject industries as a basis for deciding not to control at all some sources of arsenic emissions. Section 112 does not authorize EPA to base a decision not to regulate solely on economic factors and it should not do so.

New York's experience with EPA's implementation of Section 112 has shown that Congress must write a clear mandate into the Act to require stringent assessment of available control technology. In particular, EPA should not be given discretion to ignore sources of hazardous pollutants, unless their emissions are de minimis. I therefore propose some additional language for two new subsections which the bill would add to Section 112.

1. Proposed § 112(b)(1)(A) The Committee's bill specifies that EPA must identify the categories of sources which emit each Section 112 in "significant" amounts. If construed broadly, this language may create a loophole which would exempt many smaller sources from regulation. New York has found that EPA has been casual about what level of arsenic emissions it considers "significant." As a result, public exposure may be underestimated. Some smaller sources, which may contribute to cumulative problems, are being ignored by EPA.

EPA should be required to regulate wherever significant amounts of hazardous air pollutants accumulate, regardless of the amount contributed by each individual source. I therefore recommend that the following language be added to the end of Section 112(b)(1)(A): "...or contribute to significant pollution impacts."

2. Proposed § 112(b)(3). This proposal could be read to grant broad discretion to EPA in drafting control requirements for different types of sources, particularly older plants. Yet these last are often the worst pollution offenders. The bill should make it clear that these considerations may not be the basis for an agency decision not to regulate a source. I suggest that the following language be added at the end of the proposed § 112(b)(3): "...but may not exempt a source or class of sources from controls on the basis of these considerations."

INTERSTATE PROVISIONS

Two years ago the Eastern States' Attorneys General submitted a report to you calling for amendments to the Act's interstate provisions. This Committee's bill incorporates some of the suggestions we made and other worthwhile revisions. The changes the Committee made in sections 110(a)(2)(E) and 126 will substantially improve the interstate regulatory scheme and I fully endorse them.

There are two additional adjustments to the bill which are important to state governments.

1. The SIP Review Process. The Committee has changed the procedure by which SIPs are approved at the state and federal levels. The bill would establish a process which requires objections to be made at the state agency level and provides for automatic approval of a SIP within 120 days, if EPA has not acted on it. Participation at the state level is therefore also made a prerequisite for judicial review.

Procedural emphasis on state SIP proceedings makes sense for intrastate issues, but it does not for interstate issues. Left as it is, the new procedure would effectively preclude states from raising interstate issues in the SIP review context. This is not an acceptable result. The limitations on state resources are such that they cannot monitor and participate in other states' administrative proceedings. The practical result would be that there would be no judicial review of the application of Section 110(a)(2)(E) to SIPS.

The SIP approval provision should therefore explicitly provide that interstate issues need not be raised at the state level of the SIP proceeding.

> "(E) If any person files comments with the Administrator during the public comment period required under subparagraph (B)(i) objecting to the approval of any revision of an implementation plan or portion of such revision, and (except as such objections are based upon subparagraph (2)(E) of this subsection) demonstrates that such person filed comments on the same grounds with the State during State proceedings on such revision, such revision shall not be deemed approved under this subsection until the Administrator determines not to disapprove such revision based on a review of matters raised in such comments. The Administrator shall make such a determination or disapprove such revision for failure to comply with the requirements of Paragraph (2) of this subsection within 120 days of the close of such public comment period."

2. Section 304(e). A second interstate issue, the role of common law nuisance claims in the interstate context, has been resolved by the Committee very well in the context of its Clean Water Act bill. There the Committee made it clear that state common law applies and that states are to be considered citizens for purposes of diversity jurisdiction in the federal courts. This amendment is a sensible resolution to a problem which state attorneys general face when common law nuisances cross state lines. The Committee's Clean Water Act language should be inserted in Section 304(e) of the Clean Air Act.

CONCLUSION

I applaud the Committee's continued commitment to strong federal leadership in environmental matters and I am confident that I speak for all state attorneys general on this point. During the past three years, the Reagan Administration has repeatedly called for a return of initiative and control of environmental issues to the state governments. This refrain ignores the history and the present reality of the country's environmental problems.

Our comprehensive federal environmental statutes were enacted precisely because our environmental problems are essentially federal in nature. If states are obliged to carry the whole burden of enforcing pollution standards, without a strong federal enforcement program to see that all states do regulate pollution, then those states which maintain high environmental standards will do so at the cost of local jobs and industry. Federal standard-setting and enforcement are essential to prevent the state which regulates the least from determining other states' environmental standards--in other words, to prevent the minimum controls from becoming the maximum.

The will of Congress as expressed in the Clean Air Act must be clear and strong. The absence of this mandate would allow the EPA to abdicate its responsibilities and this would lead to an even more frequent recourse to the Federal Courts. I therefore urge the Congress to issue a strong and clear mandate on Clean Air to the EPA and the nation.

REMARKS OF LOUIS HARRIS, COALITION OF NORTHEASTERN GOVERNORS, MEADOWLANDS, N.J., DECEMBER 4, 1983

It is a privilege to come before you tonight to report to you on one of the most explosive issues facing this country, the question of how we control our environment. As Governors of States who are right in the drop zone of the effects of acid rain, it is good politics and is not a hard decision for you to press the Federal Government to resolve the acid rain crisis decisively and fast. As Governors of States where you have been beset by hazardous waste problems, again, there is urgency for action, rooted in the fury and outrage of your own best constituents.

Tonight I would like to report to you in some depth on the state of public opinion on the critical question of how we as a nation are going to both rescue and clean up our environment that has been despoiled and contaminated. Mark it well, the first estimates on polluted streams and air, the first estimates on toxic wastes, and now the first estimates on acid rain always seem to underestimate the size, the depth, and the seriousness of the problem. The instinct to survive runs so deep among the human race that it makes us optimists that any and all problems will be solved. And when we get hit from the blind side, our desperate hope is that somehow our initial surprise will turn out to be an exaggeration of the problem.

I mean to talk with you tonight in basic terms, reporting the state of public opinion and the state of the battle to save the environment without sparing the feelings of either anyone here in this room or any vital center of political power. For, as with all major problems, either we face them squarely or they will go begging for solutions.

First, one of the most common putdowns of the environmental movement is to claim that while its objectives are meritorious, it always seems to have a secondary priority. In times of energy shortages and inflation, the environmental issue is asked to take a backseat until those presumedly more important matters are tended to. In times of recession and unemployment the plea is that an environmental cleanup must wait until there are enough jobs, or the cleanup ought to be compromised to save jobs.

Well, allow me to shed some definitive light on such putdowns. A substantial 74 percent of the adult population nationally believes that curbing water pollution is "very important" in improving the quality of life, while 72 percent say the same about curbing air pollution. While a bit lower than the 83 percent who give high importance to curbing inflation, the 82 percent who feel that way about unemployment, and the 79 percent who say the same about bringing interest rates down, fighting pollution ranks on a par with economic growth, very imprtant to 74 percent, and outscores the 65 percent who feel that way about producing more energy and the 68 percent who say the same about making products and services safer.

The inscapable point is that curbing both air and water pollution is given a high priority of importance in their own right by the American people. And they are playing for keeps on this issue, make no mistake about that.

As you know, the central pieces of anit-pollution legislation in this country were the Clean Air and Clean Water Acts, enacted by Congress early in the 1970's. Both are up for renewal and both are under attack. Back in 1981, Speaker O'Neill estimated privately that renewal of both clean air and clean water intact was a highly unlikely eventuality. A whole host of amendments proposed by the auto, chemical, power, and other industries were presumed to carry both houses by roughly 2 to 1 majorities. Our firm went out in 1981 and polled public opinion on both acts. The results were incedible. So we went out and polled again. Both times the results were close to indentical.

The number who wanted to keep clean air as strict as it had been in enforcing clean air standards was 48 percent and an additional 38 percent wanted to make the law even stricter. No more than 12 percent of the people wanted to make the act less strict. Thus, by a staggering 86–12 percent, the American people wanted to keep clean air intact or make it even stricter and tougher. On the Clean Air Water Acts, an even higher 93–4 percent majority wanted to keep that act as tough as it had been or make it even stricter. I was asked to testify before the House Subcommittee on Environment and went to the mat with a rough bunch of both Republicans and Democarts who thought the fix was in to amend both basic laws. Not only did I report to them what people thought about the basic acts, but I also had tested six of the major thrusts that were all oiled and greased to go through that committee and through the Congress. Some examples of this are as follows: Relaxing current auto pollution standards, a favorite of chairman John Dingell, was rejected by 74–21 percent. Relaxing regulations that protect national park and wilderness areas from air pollution, a favorite of then Secretary of Interior James Watt, was rejected by 71–24 percent. Relaxing pollution standards to allow power plants to burn higher sulfur content oil and coal, a major objective of the electric power industry, was rejected by 80–16 percent. Relaxing Federal standards on disposal of hazardous wastes, the object of the the powerful chemical lobby, was rejected by 86–11 percent. Relax Federal standards on pollution of lakes and rivers by toxic substances from factories, a major objective of the National Chamber of Commerce, was rejected by 87–11 percent.

But these specific amendments actually were not the heart of the battle. Two other issues were critically important and, in fact, still lie at the heart of the fight to keep the environment clean. The first is basic to the Clean Air Act, and it deals with the tradeoff between protection of human health, on the one hand, and the cost of the cleanup, on the other. So, we put this question, loaded deliberately against the environmentalists, to face an ultmate test on the issue. I read a quastion in open session to two key Republican Congressmen who wanted to amend clean air and asked them if they thought this is the way they thought the issue should be framed. They said they agreed after hearing it. The question was, "the Clean Air Act does not permit the consideration of costs when setting standards for the protection of human health. The Reagan Administration wants Congress to require that pollution standards designed to protect human health be relaxed if the costs are too high. Do you favor or oppose relaxing pollution standards affecting human health if the costs are too high?" By a resounding 65–32 percent, a 2 to 1 majority of the American people opt for opposing a relaxation of the standards in order to take into account the cost of cleaning up air pollution that endangers human health.

Yet, I noted with some amazement just a week ago, when EPA Administrator Willian Ruckelshaus appeared on "Meet the Press," he said that under President Reagan's insturctions, he had to weigh every cleanup measure against the cost consequeces. As I read it, such a tradeoff where human health is involved, is both contrary to the provisions of the Clean Air Act and obviously is contrary to the will of the American people. Let me say I am not advocating Government by poll. What I am saying is that it is possible that the people are ahead of their leaders. And when they are, elected officials had better a ski "are they right?" And then, "How long will I be around to lead?"

The secound key dimension deals wiht the heart of the controversy over the Clean Water Act. It involves the concept of bat, or best available technology, which the act requires every factory to install in order to protect human health. Thus, we asked this question: "Do you think a factory whose air pollution is dangerous to human health should be granted an exception from meeting environmental standards for any reason—such as that jobs will be lost, the factory will be shut down, or the company will lose money—or should a factory whose air pollution is dangerous to human health be strictly required to install the best anti-pollution systems available?" The result was by 82–13 percent, the American people say there should be no exceptions to the Bat rule.

I am happy to report to you that both Speaker O'neill and majority leader of the Senate Howard Baker have told me that the entire situation in Congress has been turned around and there is now a solid majority in favor of keeping both the Clean Air and Clean Waterr Acts intact or even strengthening them. The public has spoken and is speaking to its elected representatives on both issues and the message is being delivered. But, let me warn you, as you governors know far better than I ever will, that the forces who still want to amend and to emasculate both acts are far from dead. They smell a big election coming up and they are prepared to make one last effort to pour in the campaign money and to redouble the lobbying efforts to get the acts weakened or even gutted, if they can get away with it.

Let me say that I am proud to have been a conduit for reporting such facts on a regular basis to the Congress. My own firm and some foundations have paid the costs of these polls not environmental organizations. And some of the scar tissue and some of the lost clients I have endured for having reported them with some force are proud trophies I carry from the fray. The environmental issue is but one of many these days where the American people are way ahead of their leaders, both the elected and self-appointed types, I am sorry to say. The battle isn't yet won, but there is now every likelihood that it will be won, if the people keep up their vigil and add muscle to their representations.

Now let me report to you directly on the subject of hazardous waste and acid rain. First, there is little doubt that the American people are thoroughly aroused about both issues. By an overwhelming 95–4 percent, a nearly unanimous majority believes that disposal of hazardous waste is a serious problem for the country and where they live. By 93–6 percent, another big majority feels that the problem of pollution of lakes and rivers by toxic substances from factories is a serious problem. By

90-7 percent, yet another big majority feels the same about acid rain in the country today. And an 84-14 percent majority feels that contamination of drinking water is a serious problem, requiring urgent attention. These are staggering numbers, by any standards. I need not remind this August body that it takes but 50 percent plus one vote to win the Governorship of any State. That requirement pales before these incredibly lopsided majorities.

Now, on the acid rain issue, which is most urgent today, it is often claimed that the public isn't really familiar with this matter. Well, we've been tracking that dimension since 1980, mainly for our private industrial clients. Back in 1980, only 30 percent felt they knew anything about acid rain. By 1981, it went to 43 percent nationwide. By 1982, 55 percent said they were familiar with the problem. And today, 63 percent, over double what it was in 1980, say they know about it—and, let me say are worried about it. When asked about which sources are important in causing acid rain, at the top of the list, the public singled out by a 93-5 percent majority as important: emissions from chemical plants. Sixty-four percent say chemical plant emissions are a very important source of acid rain. Second are emissions from plants and factories that burn coal, cited as important by an 88-9 percent majority and very important by an even 50 percent. Then, in third place is emissions from plants and factories that burn fuel oil, thought to be important by an 86-11 percent majority and very important by 43 percent. Finally, emissions from cars and trucks that burn gasoline and diesel fuel, are cited as an important cause of acid rain by an 82-17 percent majority and thought to be a very important source by 43 percent.

Just a week ago, in his "Meet the Press" interview, EPA Administrator Ruckleshaus said that the acid rain issue was a particularly tough one, since it pitted region against region. He said he thought it was primarily an Eastern problem, since the East is the victim of prevailing winds. He maintained that the Midwest, where much of the acid rain comes from, ought not to bear the cost of cleanup and control of acid rain. The West liked the idea of a cleanup, but did not feel involved. The South, he said, wanted largely to sidestep the issue altogether. He kept saying he could not get agreement from the inter-cabinet task group he had to work through before he could give a recommendation to the President. He also implied that it would be virtually impossible for Congress to overcome its regional differences and agree on an acid rain policy.

One of the pivotal questions on acid rain, of course, is who should bear the costs of cleaning up acid rain. Well let me give you some results that might be rather shocking to Bill Ruckelshaus and some others who in effect keep saying there ought to be more research on acid rain before the Federal Government comes to any resolute policy. By 73-22 percent, a big majority of the American people say they think it is fair that the costs of cleaning up acid rain should be born by all individuals and businesses who use fuels that contribute to the acid rain problem, including oil, natural gas, and gasoline. And here are the majorities in each of the regions of the country who favor that proposition of passing on the costs to everyone, including themselves: In the East, by 73-23 percent, a large majority favors such a proposition. In the Midwest, a 78-17 percent majority favors this; southerners by 71-23 percent, and people in the west by 71-24 percent also agree to this idea.

By almost an identical 72-22 percent, a big majority also feels it is fair to have the major cost for cleaning up acid rain born by shareowners of investor-owned electric utilities. And, here are the regional results on that one: People in the East favor this by a huge majority of 76-21 percent as does the Midwest by 76-18 percent. In the South, the majority is 69-24 percent and westerners favor this by 69-26 percent.

By 60-35 percent, another big majority also favors acid rain cleanup costs being paid by electricity customers nationally.

The big news, however, is that people all over the country believe the costs for cleaning up acid rain should be born both by the consuming public nationwide and by the corporations who are involved in creating the problem. And, an almost identical and big majority is willing to see business bear the major burden. Mark that well.

And, contrary to prevailing wisdom that the Congress is deeply split on this issue, here is how the Congress feels about the acid rain matter. By 71-14 percent, a big majority wants to tighten sulfur dioxide standards for new plants. A 68-18 percent majority also wants to pass a law requiring existing plants to meet stricter sulfur dioxide emission standards. And a 63-14 percent majority wants to require scrubbers for existing plants.

Against this backdrop, it is little wonder that when we asked the American people to rate the job done by various insititutions on enforcing air and water pollution standards, American industry comes up with a 68-27 percent negative rating, the Reagan administration with a 68-25 percent negative rating, and State and local governments with a 63-32 percent negative rating. Only environmental organizations come up with a positive rating: 55-40 percent.

In his invitation, Governor Kean asked me to discuss the role that these environmental issues are likely to play in the 1984 election. Let me quickly report that they are highly likely to play a pivotal role, without any question. At the moment they are powerful issues working for the Democrats. Just this month when we asked a cross-section of voters who would do a better job of protecting the environment, a Democratic or Republican-controlled Congress, the Democrats won by a decisive 59-24 percent, virtually unchanged from the result in June when a 60-25 percent majority said the same. Significantly, however, since June, both Ann Burford has been replaced by Bill Ruckelshaus as head of EPA, and Jim Watt by William Clark as Secretary of the Interior. And, by 40-26 percent, a pluralty thinks Ruckelshaus is an improvement over Burford and a 50-29 percent plurality thinks Clark is better than Watt. But, if Republicans think they will now get off the hook on this issue, they had better look twice before jumping to any such conclusion. The President's rating on handling environmental matters has remained at that solidly negative 68-25 percent both before and after he got rid of Watt and Burford. Let me add that a higher percentage of people thought Watt should have been fired for his excesses on land and environmental policy than for his bad taste and even possible bigotry in the unfortunate remark that forced him to leave office. And, while Bill Clark might think his confirmation now gives him a mandate to follow the Watt policies in interior, Clark could be riding for real trouble if he pursues a course identical to the late Secretary of Interior.

People are playing for keeps on this issue of the environment. At a time when very few citizens relish the thought of paying higher taxes, either on the Federal or State level, note that by 70-26 percent, a big majority now say they are willing to pay up to $100 extra taxes a year, along with higher utility rates, in order to clean up both water pollution and acid rain.

Although the environmental issue favors the Democrats, mainly because of the perceived record of the Reagan administration, which people believe has been to seriously amend and weaken, if not to gut, tough environmental standards, let me say that two Republican friends of mine in the U.S. Senate thank their lucky stars for having had the courage to buck administration stands on the issue. Senators Bob Stafford of Vermont and John Chafee of Rhode Island both would have lost their bids for reelection last year, if they had not gone all out for tough enforcement of the Clean Air and Clean Water Acts. The facts prove that their uncompromising stand on anti-pollution enforcement was the single most important key to their reelections.

So I must conclude to you Governors of both parties that you had better look closely and carefully to your environmental last, to be sure you have your own Houses in order. The tide that is pro-environmentalist is running strong and fast, and it is still flooding. The cause of those who would ease, relax, or emasculate the current regulations is rapidly ebbing and, politically, has just about run out. It is my judgment that 1984 will be a rare moment of truth for the environment and a number of other key issues. I am willing to stake my reputation on that, the same reputation that made our firm one of the very few who correctly forecast the Reagan sweep in 1980. So heed it well, make your case with strength and conviction, not simply because it meets the special interest of your State, but because it meets what the American people believe is a critical and indispensable key to rediscovering the quality of human existence in this country and on this planet: The return of the environment to its natural and, as nearly as possible, its pristine pure condition and shape. You know, all of our lives might ultimately depend on just that.

TESTIMONY OF
PAT SHUTT
NATURAL RESOURCES CHAIR
LEAGUE OF WOMEN VOTERS OF THE UNITED STATES
BEFORE THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
NOVEMBER 15, 1983

My name is Pat Shutt. I am Natural Resources Chair of the League of Women Voters of the United States. I am here today to represent more than 200,000 League members and supporters in over 1,300 communities in every state across the country.

Our message is one of unequivocal support for the reauthorization of a strengthened Clean Air Act. League members know that the Clean Air Act has reduced the levels of pollutants which cloud the sky with poison and diminish public health.

But League members also know that millions of people live in areas that still have unhealthy air for many months each year. We know there are dangerous, toxic air pollutants which are not yet under any control. We know that 13 years after the passage of the Clean Air Act, there are still smelters that operate without any pollution control equipment. We know that the refreshing rains of the past that irrigated farmlands and replenished waterways are now more acid than vinegar, damaging crops and sterilizing lakes as they fall to the earth.

League members also know that there is no conflict between a thriving economy and environmental protection. We believe that industrial revitalization must be accomplished without graying our skies and without blackening our lungs.

Reauthorization of a strengthened Clean Air Act has been a top legislative priority of the League of Women Voters for the last three years. We have been heartened by Congress' refusal to substantially weaken the Act. But now the time has come for Congress to act affirmatively to control acid rain and toxic pollutants. Each day Congress delays, damage to human and natural resources continues unabated. Thus, we are pleased that you have scheduled this set of comprehensive Clean Air Act hearings.

I would like to restrict my remarks this morning to several specific areas where we feel the Clean Air Act needs to be amended, and to some provisions in S. 768 that need major improvement.

CITIZEN PARTICIPATION

First, let me speak to an issue that goes to the heart of what the League of Women Voters is all about: citizen participation. The League believes that a fundamental requirement for successful implementation of the Clean Air Act is an informed and active citizenry. Citizens need access to legal and technical expertise in order to participate effectively in the regulatory process. One of the weaknesses in the present law is that there is no specific requirement for encouraging and providing for public participation in the implementation of the Act. Under Administrator Burford, we saw abuses in EPA's administration of environmental laws that aimed to squeeze citizens out of the decision making process. Specific statutory language such as that found in the Clean Water Act and other environmental laws should be added to the Clean Air Act to ensure that public participation is an integral part of the law.

ACID RAIN

Secondly, the recent string of scientific studies from the Interagency Task Force, the White House Office of Science and Technology Policy, and the National Academy of Sciences have all documented the need to act now to control the pollution that causes acid rain. Already, more than 200 lakes in the Adirondack Mountain region of New York are devoid of fish, and aquatic life in thousands more lakes and streams is at risk. Acid deposition threatens agricultural crops, and has been implicated in declining forest productivity. It eats away at buildings and historical monuments. Acid rain also raises direct human health concerns; it leaches toxic metals from soil and pipes into public drinking water supplies. Once thought to be confined to the Northeast, acid rain damage is now indicated in the mid-Atlantic, southeastern and Rocky

Mountain states.

The consensus of the scientific community is that acid rain is principally caused by sulfur dioxide pollution from uncontrolled coal-fired power plants and industrial facilities. Nitrogen oxide emissions from stationary sources and motor vehicles are a contributor as well. The landmark 1981 study of the National Academy of Sciences recommended a 50 percent reduction in acid fallout to protect threatened resources. A follow-up report released in June 1983 concluded that reductions in sulfur dioxide pollution will lead to directly proportionate reductions in acid rain. Hence, a 50 percent reduction in emissions at their source is necessary to stem the damage caused by acid rain.

The environmental effects of acid rain are cumulative and irreversible. We must begin action now to reduce emissions by 50 percent within ten years.

Last year's Committee bill, which has been reintroduced by Senator Stafford under the number S. 768, contains a provision to reduce annual sulfur dioxide emissions by 8 million tons in the eastern part of the country. This reduction is insufficient. The League would like to see the amount increased to 12 million tons. The Stafford-Hart bill, S. 769, requires 12 million tons of emissions reductions in the eastern United States within 15 years. This meets our goal of a fifty percent reduction in emissions, but the 15 year time frame allowed is too long to wait.

S. 145, the Mitchell bill, requires a 10 million ton reduction in annual sulfur dioxide emissions to be achieved over a 10 year period, in the 31 eastern states. The 10 year frame is desirable. but this bill falls short of the 50 percent reduction target.

We urge you to enact a 12 million ton, 10 year program for the control of acid rain with the dispatch that the urgency of the situation demands.

HAZARDOUS AIR POLLUTANTS

Above all, we must not forget the original intent of the clean air legislation: to protect public health and welfare. The League of Women Voters believes that prompt Congressional action is needed to spur EPA to speed up controls of an important class of largely unregulated air pollutants -- hazardous substances. There are dozens of airborne toxic substances emitted from chemical plants, refineries, coke ovens and smelters that may be implicated in cancer, genetic damage, nervous system disorders, birth defects and other serious health problems. Cancer alone is now responsible for the death of one in every five Americans, and according to the National Institute of Environmental Health Sciences, many of these cancers are derived from environmental sources.

Many of the same toxic chemicals that have been found in hazardous waste dumps and in ground and surface water are also present in the air. EPA's list of priority candidates for possible regulation as hazardous air pollutants includes substances such as chloroform, carbon tetrachloride, formaldehyde, PCBs, trichloroethylene and more than 30 others. EPA has long had authority to bring these pollutants under control. Yet in 13 years, EPA has promulgated final regulations for the control of only four hazardous air pollutants from major industrial sources.

Provisions are needed to accelerate the identification, listing and regulation of additional hazardous air pollutants. Protecting public health with an ample margin of safety must remain the goal. Congress must direct EPA to make decisions on whether the 37 chemicals that have been under study for more than half a decade are hazardous air pollutants as defined by Section 112 of the Clean Air Act. Administrator Ruckelshaus recently testified before the House that he will have made decisions on 20-25 of the pollutants by 1985, and Congress should hold him to this schedule with statutory deadlines.

Congress should also establish deadlines for decisions on the other chemicals within 5 years. If EPA fails to make a decision before the deadline passes, the 37 pollutants should be automatically listed. For each listed pollutant, Congress should require EPA to set technology-based standards for both new and existing industrial sources. At a minimum, these standards should require plants to install controls at least as effective as the best equipment already in use at a similar source. In some instances, technology-forcing controls that advance the state-of-the-art will be required to achieve levels of reduction necessary to protect public health.

The League supports the provisions of S. 768 that incorporate such an approach, but favors the adoption of the Baucus amendment to improve upon it. The Baucus amendment better addresses the airborne toxics problem by establishing permit proceedings for existing sources, creating a mechanism for prompt consideration of newly identified carcinogens, and promoting technology transfer between similar types of pollution sources.

SMELTERS

Smelters are one of the major sources of toxic air pollutants. Yet some do not even employ the most rudimentary pollution controls for emissions of conventional pollutants preferring instead to rely on vagaries of wind and weather to blow the pollution away. Eighty percent of the sulfur dioxide in the West originates in smelters. These emissions are responsible for violations of the health based air quality standards and visibility impairment and they contribute to acid rain.

The 1977 Clean Air Act amendments gave smelters a 10 year exemption from pollution control requirements, and S. 768 would extend this deadline by five additional years. Furthermore, the bill would legalize the practice of "intermittent controls" -- which are nothing more than a promise to restrict operations on bad weather days. The League strongly opposes this unwarranted exemption.

PREVENTION OF SIGNIFICANT DETERIORATION

Citizens in rural clean air areas do not want their skies to be clouded with the smoke and fumes associated with urban centers. Farmers don't want crops to be ruined by air pollution. Americans do not want to sacrifice their magnificent heritage of national parks. We know we can prevent this from happening and still allow for new growth and development. This is what prevention of significant deterioration, or PSD, is all about.

The League of Women Voters supports streamlining changes in the PSD program to reduce the time needed for permitting, but S. 768 goes too far. The League opposes the provision that would allow states to "opt out" of the increment system that is the heart of the PSD program. The increment system provides a powerful incentive to make good decisions on what constitutes the "best available technology" and to spur development of innovative pollution controls.

The League supports an amendment to the Clean Air Act to protect new national parks, wildlife refuges and wilderness areas that have been established or expanded since the 1977 Clean Air Act was passed. These areas should be statutorily designated Class I areas to protect their air quality values for future generations.

* * * * *

In conclusion, we want to assure you that the public remains Congress' greatest ally in continuing the nation's efforts to reduce air pollution. A January 1983 Harris poll found that 86 percent of Americans think the Clean Air Act should be maintained or strengthened. Last year's Committee bill is too weak to form the basis for this year's deliberations, particularly in the areas of acid rain, smelters, and PSD.

The American public and the League of Women Voters want to finish the job of cleaning up the nation's air and want to continue to keep it clean.

National Audubon Society
NATIONAL CAPITAL OFFICE
645 PENNSYLVANIA AVENUE, S.E., WASHINGTON, D.C. 20003 (202) 547-9009

STATEMENT OF LESLIE DACH

NATIONAL AUDUBON SOCIETY

BEFORE THE

SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

November 15, 1983

Mr. Chairman, Members of the Committee:

My name is Leslie Dach. On behalf of the over half a million members of the National Audubon Society, I would like to thank you for the opportunity to testify before this Committee. As you know, the National Audubon Society has been an active participant in the Committee's past deliberations on the reauthorization of the Clean Air Act.

I would like to compliment the Committee for scheduling this series of hearings. I can imagine that the prospect of restarting the arduous process of reauthorizing the Clean Air Act was not greeted with unanimous joy. But the Chairman has correctly recognized that if we are to succeed in passing a strengthened Clean Air Act in this session of Congress, we must begin that process now and follow it diligently throughout the next few months. These hearings are an important beginning to that process.

Today, I would like to address some of the major provisions of S.768. This testimony, however, is not meant to be a comprehensive statement of Audubon's position on that legislation.

S.768 does strengthen the current Clean Air Act in two important areas -- acid rain and toxic chemicals. But Audubon believes that these provisions must themselves be strengthened.

Addressing toxic chemicals first, in the 13 years since Congress established a program to regulate hazardous air pollutants, EPA has consistently failed to carry out its mandate to protect public health. EPA has issued standards for only 4 substances and has identified only three others as meeting the statutory criteria for regulation. The Agency has had numerous chemicals under study for years. but has failed to move them through the regulatory process. There is widespread agreement that the bureaucratic logjam at EPA must be broken. Any legislation to improve upon S.768 should:

- Speed up the timetable under which EPA must determine whether a pollutant is hazardous within the definition of section 112. Since the Committee's initial passage of a toxic amendment more than a year has passed, and EPA has made no new decisions in listing hazardous pollutants. The timetable on S.768 must be adjusted to make up for his slippage.

  Recently Administrator Ruckelshaus testified before the House Energy and Commerce Committee and indicated that EPA will make listing decisions on approximately 22 chemicals by the end of 1983. Any legislative approach should codify this commitment, requiring decisions on 25 chemicals by the end of 1985 and on an additional 15 chemicals by the end of 1988. EPA should also be required to make listing decisions on any air pollutants identified as carcinogenic by the National Toxicology Program within one year after such identification.

- Establish a formal permit program for existing sources affected by section 112 standards. Under current law, as amended by S.768, existing sources of hazardous air pollutants must comply with the appropriate emissions standard within two years after the standard is established.

  However, the program is essentially self-implementing; there is no formal permit or certification requirement. Any amendment should retain the timetable in S.768 but require that existing sources obtain a permit to operate from EPA.

- Clarify the technology requirements so that facilities are indeed required to install the best technology currently available for that type of facility. S.768 sets a technology floor for emissions standards at the most stringent emission limitation shown by an adequate operating history to have been achieved by a source of the same class or category. Audubon objects to the ill-defined requirement for a showing of an adequate operating history, and the narrow class and category definition of S.768.

The Committee has and will hear much about acid rain. I understand that the Committee did not want this testimony to focus on the acid rain issue.

However, given the importance of this issue to Audubon, we must include the following comments. The eight million ton, twelve year reduction program in S. 768 is too little, too late. The National Audubon Society calls upon the Committee to embrace the National Academy of Science's conclusion, and to mandate a 50% reduction in sulfur dioxide emissions in the Eastern U.S. We believe that these reductions should occur by 1993.

The National Audubon Society is gravely disappointed with the actions of this administration on acid rain. Mr. Ruckleshaus and President Reagan have failed to deliver an acid rain proposal to Congress. The proposals that we understand are before the Cabinet Council are wholly inadequate. While the Administration stonewalls on the legislative front, the EPA is busy back-tracking in the regulatory arena. On October 21, the EPA proposed changes to the NSPS regulations on coal fired power plants that would legalize an increase of 700,000 tons per year in SO_2 emissions. Current compliance with the NSPS is on a 3-hour basis. EPA proposes to change this to a 30-day basis. In order to comply with the current standard EPA estimates that a plant's yearly emissions would have to be 0.63 pounds of SO_2 per million BTUs. To meet the proposed standard, emissions could rise to 0.95 lbs/million BUT, an increase of 50%.

S.768 makes a number of weakening changes to the current law's prevention of significant deterioration program. The bill's basic compromise was to allow states to opt-out of the increment system for non-mandatory Class II areas. Audubon remains unconvined that this change is warranted.

As the Committee deliberates the PSD program once again, we suggest that in addition to reconsidering last year's opt-out decision, the Committee take a number of steps to increase protection for Class I areas. First, we suggest that certain new areas be designated by statute as Class I. These should include new national parks formed after 1977. There is simply no rationale for having two tiers of air quality protection within the national parks, simply because some parks were created after the 1977 amendments were enacted. We also suggest that this Committee redesignate as Class I the 44 areas identified by the Department of Interior as deserving this designation, as a result of the Department's review of all national monuments, primitive areas and national reserves conducted pursuant to Section 165(d) of the current law. (Some of these areas have been made national parks since the publication of Interior's review on June 25, 1980.)

We also suggest that the Committee review and strengthen the current law's procedures for allowing the Federal Land Manager to grant projects waivers from the Class I increments. We feel strongly that certain procedural changes must be enacted, including requiring the opportunity for public comment and a public hearing and making it clear that the decision of the Federal Land Manager is subject to judicial review. The law should also be amended to require that before a waiver can be granted, sufficient biological and other data be developed to demonstrate that adverse impacts will not occur. Under current law, ignorance supports a positive waiver decision.

The Audubon Society is strongly opposed to those sections of S.768 that weaken the current law for emissions from non-ferrous smelters. Fourteen smelters (12 copper and 2 lead) emit 70-80% of all the SO_2 pollution in the western U.S. This pollution is responsible for:

- hundreds of violations each year of the federal national ambient air quality standards (NAAQS). For example, one smelter in Arizona resulted in 81 days of violation of the 24-hour standard in 1981,

- dramatic adverse effects on visibility in the Grand Canyon and other nearby national parks, and

- increasing acidity of rainfall in the Mountain West.

Nearly half of all sulfur oxide emissions from smelters would be eliminated if smelters complied with the provisions of the current law by 1988. But instead of enforcing the current law, S.768 proposes to dramatically weaken it. S.768 would allow a further extension of smelter non-compliance until 1993. It further authorizes permanent use of supplementary control systems (SCS), in place of continuous pollution control technology. Audubon strongly opposes both these weakening changes. We know that SCS doesn't work. Current law allows use of SCS to meet the NAAQS, and current experience shows hundreds of standard violations each year.

Audubon supports strengthening current law for smelters. Specifically, we suggest that the Committee consider establishing a deadline for EPA issuance of the second primary nonferrous smelter order (NSO). EPA has only recently proposed regulations governing these NSOs and the time is rapidly ticking away towards the date these facilities must comply with the law. We also suggest that the law be amended to establish a firm penalty for those smelters whose emissions violate the National Ambient Air Quality Standards. Finally, we are looking into the suggestion that the current law be clarified to require an enforceable compliance schedule for all facilities seeking extensions until 1988. In EPA's proposed regulations, certain facilities are not required to have enforceable compliance schedules.

Our testimony so far has been focused primarily on criticisms of S.768. We would also like to compliment this Committee on certain sections of S.768. The Committee should be applauded for maintaining tight standards for auto and truck emissions and for retaining the percent reduction requirements of current law.

While not a comprehensive discussion of our concerns, this testimony does highlight our major interests. I appreciate the Committee's willingness to listen to these comments and suggestions.

ENVIRONMENTAL DEFENSE FUND

November 18, 1983

Senator Robert T. Stafford
Chairman
Senate Committee
Environmental Public Works
133 Senate Hart Office Building
2nd Street and Constitution Avenue, N.E.
Washington, D.C. 20510

RE: Record of Hearing on S. 768

Dear Senator Stafford:

I very much appreciate the opportunity to testify at the Committee hearing on Tuesday, November 15.

In addition to my prepared statement which I made available to the Committee, I am providing copies of the relevant excerpts from the documents to which I referred in my testimony. If possible, I would appreciate your including these documents in the printed record along with my written statement.

Given the limitations of time, I was not able to discuss some of these materials. I particularly wish to draw to your attention the EPA staff analysis of the effect of Senator Domenici's so-called "de minimis SCS" amendment on total SO_2 emissions in the Southwest. The Agency estimates that the current language of the bill could triple allowable emissions from 400,000 tons per pear to 1.2 million TPY. This information should be available to the Committee. I hope you will be able to include it in the hearing record.

Thank you for your support in opposing the de minimis SCS amendment last year, and your leadership on the nationally important issue of acid rain.

Sincerely,

Bob Yuhnke

Robert E. Yuhnke
Regional Counsel

REY:ob

Enclosure

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OFFICES IN NEW YORK, NY (National Headquarters), WASHINGTON, DC, BERKELEY, CA, RICHMOND, VA, BOULDER, CO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1X
215 Fremont St.
San Francisco, CA. 94105

Ref: Smelters
AZ-MPR

DATE: April 8, 1983

SUBJECT: Clean Air Act Amendments - Effect of Proposed "5 Percent SCS Amendment" for Nonferrous Smelters on Total Emissions of Sulfur Dioxide in Arizona and Nevada

FROM: Larry Bowerman Larry Bowerman
Environmental Scientist

TO: Files

The attached paper briefly analyzes the likely effects of the so-called "5 Percent SCS Amendment" or "De Minimus SCS Amendment" to the Clean Air Act. This amendment would allow significant increases in allowable sulfur dioxide emissions from nonferrous smelters in the United States. Systems Applications, Inc. (SAI) indicates that allowable MPR emission rates could triple in Arizona and Nevada. Allowable copper smelter emissions in Region 9 would increase from about 419,000 to at least 906,000 tons sulfur dioxide per year and could increase to as much as 1,272,000 tons per year. These are certainly not "de minimus" emissions increases as the name attached to this proposed amendment suggests. These allowable emissions increases would increase allowable atmospheric loading of sulfur dioxide and adversely impact efforts to improve visibility in the Southwest. These increases could also adversely impact efforts to control acid rain.

The proposed amendment would also amount to a major change in the air pollution control philosophy embodied in the Clean Air Act, since it would allow the partial use of dispersion techniques (supplementary control systems, SCS) to attain the NAAQS. Since EPA's creation in late 1970, Congress has required constant controls to attain the NAAQS, not dispersion techniques. Moreover, the proposed nonferrous smelter amendment would be an invitation for other sources (such as power plants) to ask for similar treatment under the Clean Air Act.

Finally, the amendment would provide for issuance of nonferrous smelter orders which could delay smelter compliance with sulfur dioxide emission limits until as late as January 1, 1993, five years longer than allowed under the current Clean Air Act. If such an extension is granted to the smelting industry, provisions similar to the "steel stretchout" (the Steel Industry Compliance Extension Act of 1981) should be included in section 119. I believe that unless such provisions are included, those smelters which are currently uncontrolled would continue to benefit from the competitive advantages they enjoy under the current provisions of section 119 to the detriment of those smelters which have made significant progress (and investments) in controlling their sulfur dioxide emissions. The "steel stretchout" requires that money saved from delays in installation of air pollution control equipment be used to modernize the facility. Similar provisions for nonferrous smelters would eliminate or reduce the economic advantages enjoyed by uncontrolled smelters. Further, smelter modernization (which would result in a more efficient and competitive nonferrous smelting industry) appears to be in the long term best interest of the smelting companies, their employees and the country.

In summary, the proposed amendment could have significant adverse impacts on EPA's and the state's efforts to control sulfur dioxide emissions from nonferrous smelters. Further, it threatens a major facet of the nation's air pollution control program, since it abandons the longstanding requirement that constant controls be utilized to attain the NAAQS. I believe that EPA's management officials should be fully aware of the consequences and implications of this proposed Clean Air Act amendment before the Agency recommends its adoption to Congress.

cc: Rich Ostrov, OEC (LE-134A)
Richard Bosof, OGC (A-132)
Roy Rathbun, OAQPS, SSCD (EN-341)
Mark Siegler, OAQPS, SSCD (EN-341)
Rob Brenner, OPRM (PM-221)
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Jack Divita, Region 6 (6AH-AI)
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Butch Rachel, Region 8 (8AH-A)
Chuck Seeley, Region 9
Mike Stenburg, Region 9
Carl Kohnert, Region 9
Dave Howekamp, Region 9
Mitsi Okamoto, Region 9
Bill Wick, Region 9

A Brief Analysis of the Proposed "5 Percent SCS Amendment" (or "De Minimus SCS Amendment") to Section 119 of the Clean Air Act as it Applies to Nonferrous Smelters

I. Introduction

Late in the last session of Congress (November 15, 1982) Senate Bill 3041 was reported out of Committee. Section 107 of this bill contains several amendments to Section 119 of the Clean Air Act affecting nonferrous smelters, including the addition of a new subsection (119(g)), which in part reads as follows:

> "(g)(1) Notwithstanding the provisions of section 123(a)(2), in establishing emission limitations for sulfur oxides for primary nonferrous smelters, the effect of the de minimus use of supplementary controls (up to five percent of any calendar year) may be taken into account.
>
> "(2) Nothing in paragraph (1) shall be construed to allow any primary nonferrous smelter to maintain a level of continuous control of sulfur oxides emissions that is less than that which presently exists at such smelter."

According to the March 4, 1983 edition of Inside EPA (page 5), EPA is considering support of identical or similar provisions. These provisions would allow the so-called "de minimus use of a supplementary control system (SCS)" (up to 5% in any calendar year) to be considered during the establishment of emission limitations for sulfur oxides for primary nonferrous smelters, while requiring that current levels of continuous emissions control at any smelter not be relaxed.

Another proposed amendment to section 119 contained in Senate Bill 3041 would allow issuance of nonferrous smelter orders until as late as January 1, 1993 rather than the current limit of January 1, 1988. This provision would allow certain eligible smelters to delay compliance with SO_2 SIP emission limits an additional five years.

II. De Minimus (5%) SCS

The addition of the proposed subparagraph (g)(1) would allow the de minimus use of SCS to be considered in establishing SO_2 SIP limits for primary nonferrous smelters. Systems Applications, Inc. (SAI) has estimated how this change would affect the multipoint rollback (MPR) emission limitations currently in effect in Arizona and currently proposed for inclusion in the SIP by Nevada. Table 1 lists the current MPR emission limits (column 1) and the estimated 5% SCS MPR emission limits (column 2) for each copper smelter in Arizona and Nevada (8 of the 15 copper smelters in the country). Table 2 lists estimated annual emissions under the current MPR emission limits and the 5% SCS MPR emission limits. Although simplifying assumptions were made in the analysis, these figures are probably good approximations of the worst-case effect of a 5% SCS amendment on the allowable SIP emission limits and total SO_2 emissions from copper smelters in Arizona and Nevada.

The figures in Table 2 show that the so-called "de minimus SCS" amendment could result in an increase in allowable emissions in Arizona and Nevada from about 419,000 tons SO_2 per year to about 1,272,000, an increase of about 853,000 tons SO_2 per year (an increase of 204%)! This is hardly a de minimus increase in total allowable SO_2 emissions. This dramatic increase in allowable emissions would virtually preclude any improvement in current visibility and/or acid rain problems in the southwestern United States, and could result in deterioration from current conditions (actual Arizona and Nevada smelter emissions were about 1,000,000 tons SO_2 during calendar year 1981 -- the highest emissions year during the 1978-1982 time period).

In its analysis (Reference 3, page 3) SAI correctly notes that there may be some problems in determining how to implement the 5% SCS provision in the proposed section 119(g)(1).

> "It is not clear at this time, however, the manner in which SCS use would be allowable for '5% of a calendar year,' i.e., whether SCS would be employed annually for 18 days, 146 discrete 3-hour periods, 438 hours, etc. We assumed for this study that the use of SCS would affect the top 5% of both the 3-hour and 24-hour ambient concentrations."

Another potential implementation problem involves whether we should assume that SCS is perfectly reliable in spite of overwhelming evidence that it is not.

III. Operation of Existing Sulfur Dioxide Controls at Smelters

The proposed subparagraph (g)(2) of Senate Bill 3041 may somewhat reduce the increase in allowable SO_2 emissions from the 5% SCS provision of (g)(1). Subparagraph (g)(2) provides that the emission limit for each smelter must not allow a decrease in the level of continuous control of sulfur oxides emissions which presently exists at a smelter. Subparagraph (g)(2) has some superficial appeal, but its meaning is ambiguous. There is a real question about what "presently existing level of continuous controls" means and how it should be determined. Should it be based on actual smelter emissions or overall percentage sulfur control? Should it be based on actual overall percentage sulfur control achieved, or what is theoretically possible with existing control equipment? Should it be based on a one year average, two year average, three year average, etc.? How does one select the year(s) used to evaluate the "presently existing level of continuous controls?" This section is so vague that the 5% SCS MPR emission rates may apply by default if the "presently existing level of continuous controls" cannot be determined. At the very least, subparagraph (g)(2) is ambiguous enough to guarantee lawsuits no matter how EPA determined the "presently existing level of continuous controls."

SAI has also estimated how this change would affect the MPR emission limitations. Table 1 lists SAI's estimates of the range of MPR annual average emission limitations that represent the "presently exisiting level of continuous controls" at each smelter (column 3). Where this emission rate is greater than the 5% SCS-MPR emission limitation, the 5% SCS-MPR emission limitation is listed, since this is the maximum allowable emission rate permitted under the proposed provisions of section 119(g)(1). Table 2 (column 3) lists the total annual SO_2 emissions which would result from the emission limitations listed in Table 1, column 3. Comparison of columns 1, 2 and 3 of Table 2 shows that total emissions would be less than under the "worst case" 5% SCS MPR emission limitations, but still substantially larger than the current MPR emission limitations. In fact, these emission limitations (column 3 of Tables 1 and 2) would result in increases of 116 to 158 percent over the allowable emissions which would occur if all eight smelters were to comply with their current MPR emission limitations. However, as discussed previously, the numbers in column 3 of Tables 1 and 2 are estimates only, since the meaning of the proposed section 119(g)(2) is open to such a wide range of possible interpretations.

IV. Permanent Use of SCS to Attain the NAAQS

Section 119(g)(1) as proposed would allow the permanent use of SCS (a dispersion technique) by nonferrous smelters to attain the national ambient air quality standards (NAAQS) for sulfur dioxide. Thus, a major change in the air pollution control philosophy of the country is embodied in a seemingly innocuous amendment to the Clean Air Act. After passage of the Clean Air Act amendments of December 31, 1970, various courts ruled that the NAAQS were to be attained using constant controls, not dispersion techniques such as tall stacks and SCS. In August 1977 Congress amended the Clean Air Act and clarified its intentions with regard to the use of constant controls to attain the NAAQS. Section 110(a)(2)(B) of the Act requires the state implementation plan (SIP) to include emission limitations and such other measures as are necessary to ensure attainment and maintenance of the NAAQS. In section 302(k), Congress made clear that those emission limitations must be achieved by the use of constant emission control technology alone. The use of any dispersion techniques to meet national standards is prohibited, except as provided in sections 119 and 123.

Section 119 allows certain eligible nonferrous smelters to use dispersion techniques (SCS and tall stacks) as a temporary means of attaining the NAAQS during the period of a nonferrous smelter order (NSO - a mechanism established by Congress to allow eligible nonferrous smelters to delay compliance with SO_2 emission limitations based on economic considerations). Section 123 prohibits the use of dispersion techniques (SCS and tall stacks), which may reduce the required degree of emission limitations, unless the dispersion techniques were implemented before December 31, 1970.

The addition of section 119(g)(1) to the Clean Air Act would represent a major departure from Congress' existing air pollution control philosophy, since it would allow the permanent use of SCS, a dispersion technique, to attain the NAAQS. Although only immediately applicable to a relatively small number of sources, this change could have significant adverse consequences on national air pollution control philosophy. If SCS can be used to attain the NAAQS, why shouldn't similar provisions be made for the use of tall stacks to attain the NAAQS? If smelters can use dispersion techniques to attain the standards, why shouldn't power plants and/or other sources be allowed similar provisions in the Clean Air Act? In short, the proposed section 119(g)(1) could be the "foot in the door" that industry needs to effect a major change in the country's air pollution control philosophy, i.e., to allow the use of dispersion techniques instead of, or in combination with, constant emission controls. Such a change could significantly increase total atmospheric emissions as illustrated in Tables 1 and 2. In short, section 119(g)(1) would have disastrous consequences on EPA and state efforts to control sulfur dioxide air pollution from nonferrous smelters. It could also undermine the country's entire air pollution control program by rekindling the debate about the use of dispersion techniques to attain the NAAQS.

V. Practical Effects of Section 119 Nonferrous Smelter Order (NSO) Provision

Section 119 was included in the August 1977 Clean Air Act amendments to provide relief to the economically troubled nonferrous smelting industry. The relief was granted by providing for issuance of nonferrous smelter orders (NSOs) to those smelters which could show that they could not afford to install the SO_2 control equipment necessary to comply with their SIP emission limits. These NSOs allow smelters to delay compliance with their SIP emission limits until as late as January 1, 1988. Senate bill 3041 would allow postponement of compliance until January 1, 1993, an additional five years.

At least two smelters (Phelps Dodge, Douglas, AZ and Kennecott, McGill, NV) are using section 119 as a total exemption from sulfur dioxide control. Neither smelter has any current sulfur dioxide control, nor do they have any plans to install constant controls. In fact, both smelters have publicly stated that they will not install any constant controls and that they intend to shutdown if forced to install constant controls.* Thus, section 119 is acting as an extended exemption from any constant controls at these two smelters, and it gives them an economic advantage over their competitors during the terms of an NSO (neither smelter has had to invest in air pollution control equipment for sulfur dioxide control, nor does it have the annual operation and maintenance expenses associated with operating this control equipment). There is some evidence to indicate that controlled smelters may be losing business to these uncontrolled smelters (Reference 4). It seems unlikely that Congress intended this to occur. Extension of the NSO time period an additional five years to January 1, 1993 doesn't appear to be justified at this time, but if an extension is granted, provisions should be added to section 119 similar to those for the "steel stretchout" (the Steel Industry Compliance Extension Act of 1981) which require that money saved from delays in installation of air pollution control equipment be used to modernize the facility. Such provisions would reduce or eliminate the economic advantages provided by section 119 to uncontrolled smelters over their competitors.

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* The agreement between the White Pine Power Project and Kennecott Minerals Company might result in the installation of constant controls at McGill Smelter.

VI. Compliance Schedules

Section 119 currently contains inconsistencies with regard to compliance schedule requirements for installation of constant controls during the second NSO. Section 119(c)(2) requires that all smelters be in compliance with SIP emissions limits no later than January 1, 1988. Section 119 (c)(1) first requires compliance schedules which require compliance as expeditiously as practicable, then says that compliance schedules cannot be imposed until after the Administrator determines that the means to achieve compliance "have been adequately demonstrated to be reasonably available within the meaning of subsection (b)(3)." There ought to be an absolute requirement for a compliance schedule to comply by January 1, 1988 rather than a requirement conditioned upon a finding by the Administrator. If the Administrator cannot show that compliance can be achieved by means that "have been adequately demonstrated to be reasonably available" then a smelter will be required to comply by January 1, 1988, but not be on a compliance schedule to install the constant controls necessary to comply by January 1, 1988. What happens on January 1, 1988? Plant shutdown; production cutbacks?

References

1. Arizona Department of Health Services, "Ultimate Sulfur Dioxide Emission Limits for Arizona Copper Smelters," September 1979.

2. Kennecott Minerals Company, "Technical Support Document: Multipoint Sulfur Dioxide Emission Limit for KMC Smelter in McGill, Nevada," March 8, 1982.

3. D.A. Latimer, P. Saxena, and W.R. Oliver, "An Analysis of SCS Use of Smelter Emission Limitations and the Air Quality Implications of SO_2 Emission Trades Between Western Power Plants and Smelters," a report prepared for EPA by Systems Applications, Inc., February 15, 1983.

4. Letter dated October 21, 1981 from Peter Steen, President of Inspiration Consolidated Copper Company, to Congressman Eldon Rudd.

Table 1: Estimated 5% SCS SO_2 Emission Limits for Arizona and Nevada Copper Smelters (pounds SO_2 per hour, annual average)

	Current State MPR Emission Limit (lbs/hr) Annual Average	Emission Limit Based on 5% SCS Use and MPR (lbs/hr) Annual Average [1]	Emission Limits Based on Current Sulfur Removal Capabilities at Maximum Design Capacity (lbs/hr) Annual Average [2]
1. Phelps Dodge, Ajo, AZ	8,900	27,287	9,741 to 16,528
2. Phelps Dodge, Douglas, AZ	15,675	46,217	46,217[3]
3. Phelps Dodge, Morenci, AZ	10,505	21,867	21,867[3]
4. ASARCO, Hayden, AZ	9,521	56,217	39,886 to 56,217
5. Kennecott, Hayden, AZ	7,790	45,996	7,790 to 13,200
6. Inspiration, Miami, AZ	3,163	12,092	3,163 to 12,092
7. Magma Copper, San Manuel, AZ	18,275	49,368	47,020 to 49,368
8. Kennecott, McGill, NV	21,800[4]	31,344	31,344[3]
TOTAL:	95,629	290,388	207,028 to 246,833

Table 2: Estimated SO_2 Emissions from Arizona and Nevada Copper Smelters (tons SO_2 per year)

	Current State MPR Emissions (tons/year)	Emissions Based on 5% SCS use and MPR (tons/year) [1]	Emissions Based on Current Sulfur Removal Capabilities at Maximum Design Capacity (tons/year) [2]	1981 Actual Emissions (tons/year)	1982 Actual Emissions (tons/year)
1. Phelps Dodge, Ajo, AZ	39,982	119,517	42,666 to 72,393	39,420	15,330
2. Phelps Dodge, Douglas, AZ	68,657	202,430	202,430[3]	332,150	90,520
3. Phelps Dodge, Morenci, AZ	46,012	95,777	95,777[3]	123,370	19,710
4. ASARCO, Hayden, AZ	41,702	246,230	174,701 to 246,230	100,740	101,470
5. Kennecott, Hayden, AZ	34,120	201,462	34,120 to 57,816	32,120	13,140
6. Inspiration, Miami, AZ	13,854	52,963	13,854 to 52,963	28,470	22,630
7. Magma Copper, San Manuel, AZ	80,045	216,232	205,948 to 216,232	217,540	148,190
8. Kennecott, McGill, NV	95,484[4]	137,287	137,287[3]	126,290	96,360
TOTAL:	418,856	1,271,899	906,783 to 1,081,129	1,000,100	507,350

WESTPO RESOLUTION 83-002

RECEIVED
SEP 28 1983
ENVIRONMENTAL DEFENSE FUND

August 20, 1983
Bismarck, North Dakota

Sponsors: Governors Scott Matheson and Ed Herschler

Subject: Clean Air Act policy - acid deposition

A. Background

In September of 1980, the members of the Western Governors' Policy Office committed to "play a full and constructive role in congressional proceedings dealing with the Clean Air Act." In May of 1981, the governors, after a thorough review of clean air issues from a western perspective, adopted a policy statement on the Clean Air Act (CAA) which addressed five areas: federal and state roles, prevention of significant deterioration, visibility, non-attainment areas and long-range transport and interstate cooperation. This position was amended in July 1982 to include a position on formulation of performance standards for new sources which supports maximum flexibility in meeting emissions standards, including the use of low-sulfur fuels or innovative technologies.

The WESTPO policy recognizes the need for a program to control acid rain and states: "In order to deal with the particular problem of acid rain, initial steps to reduce sulfur oxide and nitrogen oxide emissions, including an emissions reduction program for major existing fuel burning sources, should be aimed at the most cost-effective methods and obvious sources. To provide a better information base and reflect the effects of acid rain, there should be expanded ambient acid deposition monitoring using standardized methods of sampling and analysis."

The policy recommendations adopted here reaffirm the substance of our 1981 statement, but also recognize that the body of scientific evidence in support of an emission reductions program continues to grow. During recent months, several important acid rain studies have been completed. Most significantly, the National Academy of Sciences concluded that there is a direct relationship between SO_2 and NO_x emissions and acid deposition. These studies have been limited almost exclusively to the Midwest and Northeast regions of the country. They have not addressed the unique climate and terrain of the western states and the conclusions of these studies are not applicable across the nation.

At the same time, the congressional debate has begun to focus on some key acid rain issues: the size of the program, financing, and the method of emissions reductions. Legislation introduced last month would extend the acid rain control program to 48 states, impose a nationwide utility fee to finance the program, and eliminate the possibility of switching to low sulfur fuels to achieve emission reductions. According to 1980 data, emissions from WESTPO states represented only 4.4% of the nation's utility emissions, and many western sources are already fully controlled. Any contributions made by western sources to an acid rain problem have not yet been identified or understood. Further, the Office of Technology Assessment (OTA) concluded in 1982 that various scrubbing technologies are up to three times as costly as fuel switching in achieving similar SO_2 reductions. Finally, 48-state legislation would force western utility ratepayers, who in many cases are already paying for technological emission controls on western power plants, to finance those same controls across the nation, primarily to limit the marketing opportunities for western low sulfur coal. OTA has recently estimated that legislating technological controls will reduce potential western coal production by over 14 million tons annually, while imposing significantly higher costs.

B. Governors' Policy Statement

Western governors are sensitive to the environmental damage caused by acid rain and are particularly concerned about the potential for future problems in western states. We are not opposed to making a contribution toward the solution of an important national problem, but we must oppose legislative proposals which impose significant direct and indirect costs on western states, while providing no benefits to our citizens.

Within a comprehensive reauthorization of the CAA the Congress should adopt an acid rain control program which:

1. Encourages the most cost-effective emission reductions. Legislation should not mandate technological controls or prohibit the use of cleaner fuels to achieve reductions in emissions.

2. Relies primarily on states to implement emission reductions. Legislation should allow states to select any reduction measures they desire including, but not limited to: early retirement of sources, cost-effective retrofits, energy conservation investments, fuel switching, and precombustion cleaning of fuels.

3. Does not impose nationwide costs while providing only regional benefits. An acid rain control program which imposes costs on all regions must also provide some direct benefits to all regions. In several regions of the country, including the West, citizens have already made a significant investment in emission controls. Acid rain legislation should not reward inaction. Similarly, in any funding plan, credit should be given to sources of electricity, like hydroelectric power, which are non-polluting.

4. Recognizes regional differences in size and type of emissions, climate, and topography. Congress should not impose additional emission reductions in the West based on data that is limited to existing studies of the East and Midwest. Under current provisions of the Clean Air Act, which the governors support, emission levels of SO_2 and NO_x in the West will decline. In the meantime, Congress should direct EPA to immediately initiate cooperative studies with the states, addressing the long-range transport of pollutants in the high and complex terrain of the western region. Such studies should be completed within four years and should form the basis for any necessary legislative action.

5. Minimizes emissions from new sources throughout the country through the application [illegible] Best Available Control Technology and revision of new source performance standards where appropriate.

C. Management Directive

1. Present this statement to the congressional members from WESTPO states and to other appropriate congressional leaders. Present this position in congressional hearings on reauthorization of the Clean Air Act.

2. Present this statement to the President, the Administrator of the Environmental Protection Agency and members of the Cabinet Council on Natural Resources and Environment, requesting that western concerns be considered in the formulation of the Administration's acid rain policy.

3. Staff will conduct an ongoing review and assessment of studies on acid deposition and long range transport of pollutants in the WESTPO states in order to provide the governors and the Air Quality Steering Committee with a more thorough understanding of these processes.

4. The WESTPO staff and the Air Quality Steering Committee will work with other states and other western interests to advance common goals and objectives of this policy.

DISPOSITION:

Approved: All, except New Mexico abstained

Disapproved: None

Date of Action: August 20, 1983

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330 Pennsylvania Avenue, S.E.
Washington, D.C. 20003 (202) 547-1141

TESTIMONY

BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ON S. 768

ON BEHALF OF THE SIERRA CLUB'S NEW HAMPSHIRE GROUPS

PRESENTED BY TED UNKLES

November 15, 1983

I am Ted Unkles, Chairman of the Upper Valley Group of the Sierra Club, but I am here today speaking on behalf of all 3 Siera Club groups in New Hampshire: the Merrimack Group and the Monadnock Group as well as the Upper Valley Group. I am here today to comment on the portions of S. 768 which deal with acid rain, the Prevention of Significant Deterioration Program and visibility protection.

First, I would like to make the following brief comments about acid rain. All of New Hampshire is very seriously affected by acid rain. All of our soil is deficient in calcium, and most of our bedrock is granite or other mostly inert rock. My own research while studying at Dartmouth College documented how poorly these soils neutralized the acid rain, and this has devastating effects on our terrestrial and aquatic ecosystems.

Much of the data used in the report released by the National Academy of Sciences this past summer was collected in the Hubbard Brook Watershed, in New Hampshire's White Mountains.

The New Hampshire Groups feel very strongly that New Hampshire and the nation need legislation mandating a 12 million ton reduction of SO2 emissions over a 10 year period.

The Sierra Club has also maintained a longstanding interest in the Clean Air Act Prevention of Significant Deterioration (PSD) program. It was the Sierra Club lawsuit which originally forced the EPA Administrator to establish a program to limit the degradation of air which is already cleaner than the National Ambient Air Quality Standards.

In 1977 Congress formally enacted the PSD program. Congress established air pollution budgets, or "increments", for different regions of the country. Congress created three categories of air to be protected under the 1977 Clean Air Air Amendments.

Class I protection, the strictest available, includes all national parks exceeding 6,000 acres in size, all national wilderness areas and national memorial parks greater than 5,000 acres and all international parks. These 158 Class I areas represent only about one percent of the country.

All other attainment areas in the country were automatically created Class II areas, allowing somewhat greater air pollution growth. A Governor may downgrade these areas to Class III, allowing maximum air pollution growth, or upgrade to Class I protection.

Congress mandated that certain Class II areas must not be downgraded to Class III protection. These areas include any national park or wilderness area created since the 1977 Amendments or any national monument, primitive area, recreation area, wild and scenic river, wildife refuge, lakeshore, or seashore larger than 10,000 acres.

Each new polluting facility must demonstrate to the permitting agency that emissions from the new source will not exceed the allowable increment. The permitting agency must also require the facility to install the "best available control technology" (BACT). The BACT determination by the permitting agency allows balancing of economic and environmental goals. Together, these two requirements ensure that air quality will be protected in our clean air regions with reasonable balacing of our air quality and economic goals.

The New Hamsphire Groups of the Sierra Club strongly support the existing PSD program. It has protected our clean air in New Hampshire -- one of the State's most valuable resources, since tourism is such an important part of our ecocomy. Proponents of the elimination or substantial weakening of the PSD program have not demonstrated that it has stopped the construction of any industrial facility.

And yet, last year this Committee reported a bill, S. 3041, which would substantially weaken the PSD program. Reintroduced this year as S. 768, the Committee bill goes beyond mere finetuning of the PSD program. It permits Governors to remove any non-mandatory Class II area from the increment system. Governors are permitted to remove these areas at any time, and without an adequate public hearing process.

After a Governor has eliminated the Class II increment for a region, the only protection remaining is the BACT determination by the State. But this is woefully inadequate. The BACT determination is a balancing process. Without the increment system in place, no legal mechanism will force the development of tougher pollution control technology and ensure proper budgeting of air pollution growth

The Committee's proposed PSD program will pit state against state as governors weaken Class II protections in a bid for new industrial development. All New England states would be losers here. Since energy in New England is already quite expensive, it may appear especially attractive to many New England governors to reduce Class II standards, which means dirtier air for everyone.

In your Clean Air Act rewrite in this Congress, the New Hampshire Groups urge the Committee to abandon last year's proposal. Instead, the Committee should adopt more moderate streamlining changes which do not abandon the federal Class II increment program.

The Committee should also upgrade PSD protection for several categories of federal lands. Class I protection is necessary for these national treasures.

NEW NATIONAL PARKS

Since the enactment of the 1977 amendments, 15 new national park system areas have been created which meet the acreage criteria for Class I areas. These areas are presently protected as Class II, and Congress should upgrade them to Class I.

ALASKA NATIONAL PRESERVES

The Alaska National Interest Lands Conservation Act of 1980 created a new land classification system: the Alaska National Preserve. These lands are managed the same as all other national parks except that sport hunting is allowed. The Alaska preserves need the same air quality protection as National Parks, and Congress should upgrade them to Class I.

INTERIOR DEPARTMENT RECOMMENDATIONS

As instructed to by the 1977 Clean Air Act amendments, the Secretary of Interior identified in 1980 44 areas that possess significant air quality related values and he recommended that they be reclassified as Class I (Federal Register, June 25, 1980). These recommendations were made after months of careful study. Congress should upgrade these 44 areas to Class I.

It should be noted that none of the areas recommended for Class I status are National Forest wilderness areas. It is not the intention of the Sierra Club to redesignate these wilderness areas created since 1977. No area created beyond the date of enactment of this legislation would receive any automatic reclassification.

A complete list of the areas in these three categories is attached.

VISIBILITY PROTECTION

Small particles of air pollution in the atmosphere scatter and absorb light, thus obscuring visibility across this nation. The New Hampshire Groups are concerned about the degradation of visibility in New Hampshire and across the country as a result of air pollution increases. This problem is particularly acute in our National Park system. In 1980 the Director of the Park Service declared air pollution and visibility the number one threat to our national parks. The Grand Canyon alone experiences 100 days of the year when visibility is obscured. Congress wisely saw fit to include a program for protection against visibility degradation in the 1977 amendments to the Clean Air Act.

Two steps must be taken to stop visibility degradation. First, pollution plumes from individual emitters, such as power plants or strip mines, must be controlled. Second, regional loading or haze must be limited. EPA has issued regulations to implement a phased program to control these varieties of visibility degradation.

EPA has adopted an extremely cautious regulatory program to limit visibility loss. The program puts primary emphasis on state level decision-making. States have the final determination on how to amend their State Implementation Plans (SIP) to limit pollution after considering the costs and benefits of protecting visibility.

Under the 1977 Clean Air Act amendments, the Federal Land Manager (FLM) has an affirmative responsiblity to protect visibility within the Class I area. The FLM works in close conjunction with the State to ensure visual protection. In addition, the FLM must identify vistas which extend outside the park, but are critical to maintaining a park's high quality. The

Department of Interior has already identified 177 vistas in 35 states which must be protected.

The New Hamshire Groups strongly support this program and oppose any weakening changes to the law or to the regulatory program. Loss of visibility is a serious problem in our Class I areas, and this cautious program must be given time to work before Congress makes any changes.

I have stood upon many magnificent summits in New Hampshire's White Mountains, on supposedly "clear" days, and have been unable to see ridges and other peaks less than 10 miles away. This obviously has a strong effect on the quality of a visit to the White Mountains. The visual experience is a very important component of any visit to any federal lands, and the New Hampshire Groups believe that the Committee should staunchly defend this program.

CLASS I NATIONAL PARK REDESIGNATIONS

STATE-TYPE-AREA	GROSS ACREAGE	CONTIGUOUS ACREAGE ALREADY CLASS I	FEDERAL LAND MANAGER
ALASKA			
National Parks:			
Denali	2,426,000	1,939,493	NPS
Gates of the Arctic	7,032,000		NPS
Glacier Bay	3,878,269		NPS
Katmai	5,330,126		NPS
Kenai Fjords	567,000		NPS
Kobuk Valley	1,710,000		NPS
Lake Clark	2,439,000		NPS
Wrangell-St. Elias	8,147,000		NPS
Total	31,549,395		
CALIFORNIA			
National Parks:			
Channel Islands	240,354		NPS
Redwood	48,000	109,027	NPS
Sequoia	16,000	403,023	NPS
Total	313,554		
NEW MEXICO			
National Parks:			
Chaco Canyon	33,989		NPS
OREGON			
National Parks:			
Crater Lake	24,000	160,290	NPS
TEXAS			
National Parks:			
Big Bend	21,230	708,118	NPS
FLORIDA			
National Parks:			
Biscayne	174,643		NPS

SECTION 164(d) CLASS II AREAS RECOMMENDED BY THE DEPARTMENT OF INTERIOR FOR REDESIGNATION TO CLASS I

STATE-TYPE-AREA	GROSS ACREAGE	FEDERAL WILDERNESS AREAS ALREADY DESIGNATED CLASS I
ARIZONA		
Chiricahua NM	10,648.25	9,400
Canyon de Chelly NM	83,840.00	----
Organ Pipe Cactus NM	330,688.88	312,600
Saguaro NM	83,578.07	71,400
Sunset Crater NM	3,040.00	-----
Wupatki NM	35,233.24	----
Paiute Primitive Area	35,092.00	---
Paria Canyon Primitive Area	27,515.00	----
CALIFORNIA		
Death Valley NM	2,067,795.06	----
Joshua Tree NM	559,959.79	429,690
Lava Beds NM	46,821.33	28,460
Muir Wood NM	553.55	----
Pinnacles NM	16,215.67	12,952
Chemise Mountain Primitive Area	3,941.00	----
COLORADO		
Black Canyon of the Gunnison NM	13,672.13	11,180
Colorado NM	20,444.67	----

STATE-TYPE-AREA	GROSS ACREAGE	FEDERAL WILDERNESS AREAS ALREADY DESIGNATED CLASS I
Dinosaur NM	211,053.45	----
Great Sand Dunes NM	36,826.50	33,450
Powder Horn Primitive Area	40,400.00	----
FLORIDA		
Big Cypress National Preserve	570,000.00	----
Fort Jefferson NM	47,125.00	----
IDAHO		
Craters of the Moon NM	53,545.06	43,243
MONTANA		
Beartrap Canyon Primitive Area	2,861.00	----
Centennial Primitive Area	24,166.00	----
Humbug Spires Primitive Area	7,041.00	----
NEVADA		
Death Valley NM	2,067,795.06	----
NEW MEXICO		
Bandelier NM	36,971.20	23,267
Capulin Mountain NM	775.36	----
El Moro NM	1,278.72	----
Gila Cliff Dwellings NM	533.13	----
White Sands NM	145,334.76	----
OREGON		
John Day Fossil Beds NM	14,402.00	----
SOUTH DAKOTA		
Badlands NM	242,302.33	64,250

NATIONAL PRESERVE - CLASS I REDESIGNATIONS

PRESERVE	GROSS ACREAGE	FEDERAL LAND MANAGER
Aniakchak National Preserve	466,238	NPS
Bering Land Bridge National Preserve	2,774,182	NPS
*Denali National Preserve	1,335,380	NPS
*Gates of the Arctic National Pres.	943,327	NPS
*Glacier Bay National Preserve	54,948	NPS
*Katmai National Preserve	410,473	NPS
*Lake Clark National Preserve	1,405,487	NPS
Noatak National Preserve	6,537,204	NPS
*Wrangell-St. Elias National Preserve	4,872,953	NPS
Yukon Charley Rivers National Pres.	2,516,821	NPS

*Lands contiguous to the national park

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TESTIMONY

BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ON S. 768

PRESENTED BY DIANE GEERKEN

VERMONT GROUP SIERRA CLUB

November 15, 1983

My name is Diane Geerken. I am from South Burlington, Vermont, and am here today speaking for the Vermont Group of the Sierra Club and the Vermont Clean Air Coalition. The Coalition is made up of 10 organizations (Vermont Natural Resources Council, Vermont Audubon Council, Vermont Lung Association, Vermont League of Women Voters, Vermont Sierra Club, Vermont Friends of the Earth, Vermont Public Interest Research Group, Vermont Institute of Natural Sciences, Trout Unlimited, Lake Champlain Committee) who have pooled their resources to work for the passage of a reauthorized Clean Air Act that is as strong as what we have and, in some respects will be stronger.

As many of you may know, Vermont is a very attractive place. If you have been there, or even just seen pictures, you know what I am talking about.

As you are probably aware, Vermonters consider our Senator Stafford as a champion of the Clean Air Act because he steadfastly insists in not allowing it to be weakened. We know that what he is doing is vitally important to us and to the rest of the nation, and we hope you will follow his lead.

We urge you under no circumstances to permit weakening of protection provided for in the Clean Air Act currently in effect. For example, we believe that all Americans should be protected from unhealthy levels of air pollution. The standards are now set to safeguard everyone's health, including those in particularly vulnerable groups such as the elderly, children, and people with respiratory ailments and heart disease. The American people expect all groups to be protected, and believe this can be achieved. As you have certainly heard, an unexpectedly large number of people have indicated that cost should not be a deterring factor.

On the question of restricting auto pollutant emissions, we in Vermont have reason to believe that the requirements of the present law have reduced carbon monoxide levels in an area where standards were not previously being met -- in our largest city, Burlington. The monitors show a lowering of carbon monoxide levels at a time when traffic has definitely not diminished. Given the time frame, we are guessing that the reduction results from the required emissions controls on later model automobiles. This condition must not be allowed to deteriorate by a weakening of the present requirements.

A third area of concern to Vermonters is the prevention of significant deterioration (PSD). Because most of our air quality is to be maintained rather than improved, we rely on the present requirements for not allowing undue deterioration. We believe the law, applied nationwide, is necessary to prevent competition among states for setting low enough standards to attract industries which are seeking that when deciding where to locate, or whether to move. Therefore, we urge you to keep the present PSD provisions in force. If any changes are made which are said to be minor, please be sure they are truly that, and will not result in less protection.

In addition to maintaining the strength of the current Clean Air Act, we are seeking to convince committee members that it is high time for language which speaks to problems caused by the long range transport of pollutants -- especially acid rain.

It is evident in Vermont that a sizeable portion of harmful pollutants measured in our air do not originate in our state. If we wish to reduce the levels of pollutants, our only option as of now is to control emissions in Vermont, as we must do in some cases to comply with national Clean Air Act standards. We have responded to that with appropriate restrictions.

But there is no way to reduce damaging pollution from outside Vermont.

This strikes us as a patently unfair situation, particularly when we realize that one reason so much sulfur pollution reaches us from long range transport through the atmosphere is that extremely tall stacks have been permitted on power plants to our south and west, so that Clean Air Act standards could be met in the areas where the plants are located. Perhaps this result was not foreseen when the permission was first granted. But now there are few who would deny the effect of the long range transport of these pollutants on the areas where they fall.

If your neighbor was found to be the originator of any harmful substance which made its way into your backyard, you would insist that amends be made and that action be taken to stop the substance from entering your property. We in the Northeast have this feeling about what is coming at us from elsewhere.

Now we understand more about the acid rain problem. There was a time not long ago when we believe that hazy atmospheric conditions were caused simply by high humidity. However, we have since learned of the compelling co-incidence that hazy days occur when the wind blows from the Southwest. We see clear days when the wind comes from the northwest. We now know that the haze is produced by sulfate particles with moisture on them, particles we did not produce.

Last year the Committee passed an acid rain provision which would reduce sulfur dioxide emissions by 8 million tons over a 12 year period. This was a substantial accomplishment, especially in light of the pressure this Committee was under to weaken the law.

But scientific evidence now tells us that more substantial reductions of sulfur dioxide emissions are needed. The Reagan Administration's office of Science and Technology policy has called for substantial reductions in sulfur dioxide emissions. The National Academy of Sciences has recently issued two reports, which taken together indicate the need for a 50% reduction in sulfur dioxide emissions, expecially in the East. A reduction of this level would equal approximately a 12 million ton reduction. We urge the Committee to adopt a 12 million ton acid rain reduction program, and to require these reductions be achieved within 10 years. We have lost too much time already to wait any further.

We do not understand the hesitation to take action to correct the problem, especially since there is more and more evidence that acid rain occurs in a much wider area than just the Northeast.

We hear that some are concerned about the cost of pollution controls and the risk, as they see it, of spending money and not sufficiently affecting the problem.

We believe the risk of acting is worth taking. Repairing damage is far more expensive than preventing it, and may in this case be a practical impossibility.

If you are hesitating to support a re-authorization bill which will maintain the strengths of the present act and address the problem of acid rain, please ask yourself what the majority of your constituents desire from a Clean Air Act. They are probably not much different from those participating in a Lou Harris survey, where the overwhelming majority favored maintaining the present Clean Air Act's strengths, and 47% were in favor of strengthing the Act, a figure up from 29% when the same question was asked 2 years ago.

Clean air advocates rely on you and your colleagues who represent us in the U.S. Congress to take responsible action regarding the Clean Air Act.

NEWSLETTER

Vol. 20 No. 1 LAKE CHAMPLAIN COMMITTEE. October 1982

Citizen's Acid Rain Monitoring Program

The Citizen's Acid Rain Monitoring Program has been underway since June and the map shown in this Newsletter is the result of the data collected by the 150 volunteer monitors throughout the Lake Champlain Drainage Basin.

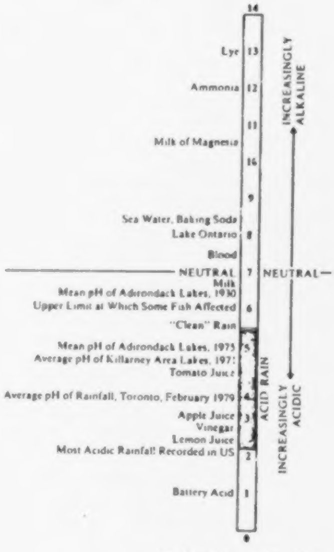
The monitors data consists of the acidity of the precipitation determined by pH paper ranging from 2.5 through 7, the volume, time of the event, strength of the shower or downpour, wind direction, lightening and unusual events during precipitation.

This information is interpreted by Mr. Tim Scherbatskoy under the direction of Dr. Richard Klein of the University of Vermont's Botany Department. The computer mapping was accomplished by undergraduate, Matt Grady, and the data mapping by Steve Farrow under the direction of Dr. Charles Ryerson of the Geography Department.

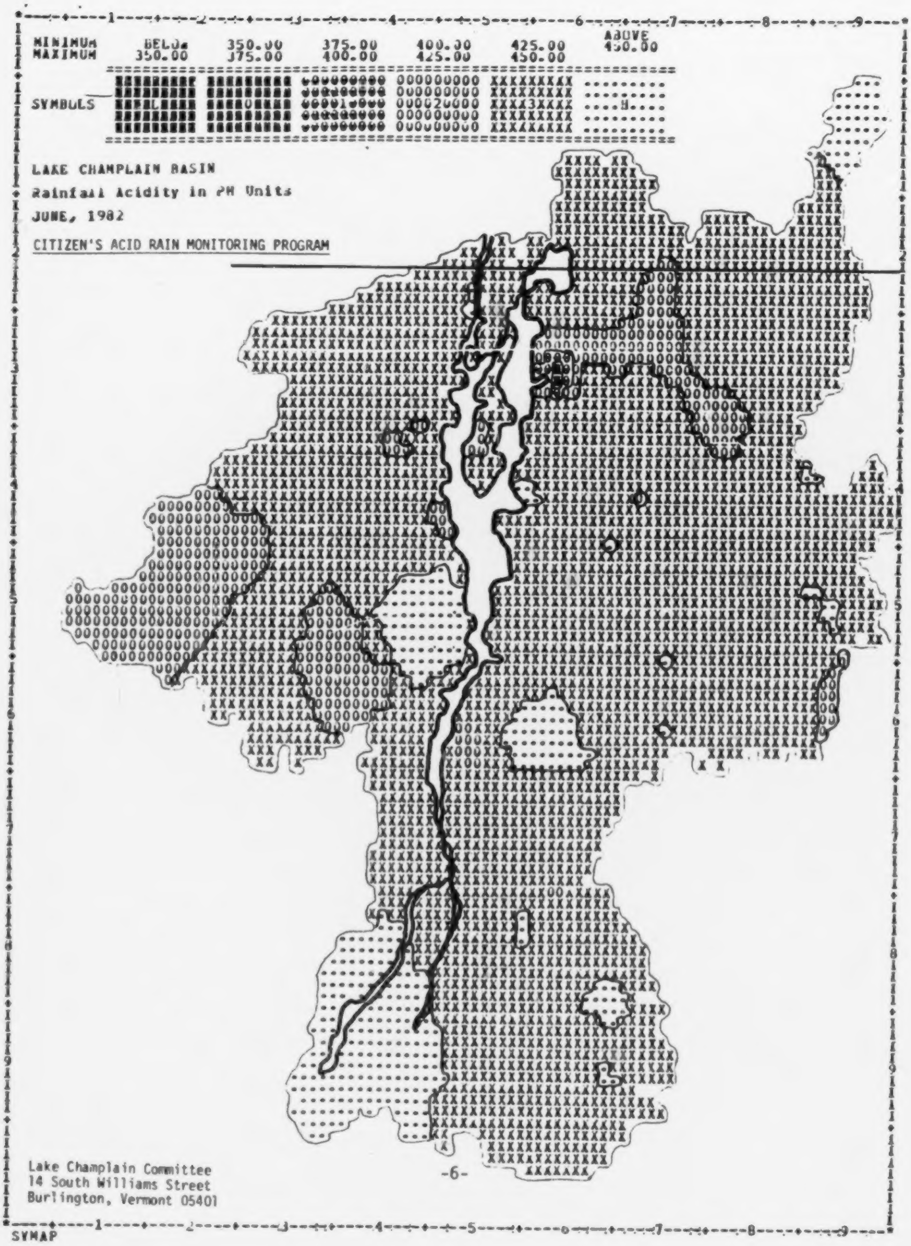
Through the kindness of Dr. Hub Vobelmann, Advisory Board member and colleague of Dr. Klein, the Citizen's Acid Rain Monitoring Program was reported in the New York Times July 26th. Since then, many people have called and written wanting to participate as monitors and about implementing the program in North Carolina, New York and New Hampshire. Anne Baker has given media interviews on the subject, among which were Montreal's Channel 12, T.V. and WRKO New York.

The ultimate credit for the success of the program goes to the citizen's who are very dedicated and interested in the problem of acid precipitation in the region. Our sincere appreciation and thanks goes to all of them.

The Acid Scale


14
Lye 13
Ammonia 12
11
Milk of Magnesia
10
9
Sea Water, Baking Soda
Lake Ontario 8
Blood
NEUTRAL 7 NEUTRAL
Milk
Mean pH of Adirondack Lakes, 1930
Upper Limit at Which Some Fish Affected 6
"Clean" Rain
Mean pH of Adirondack Lakes, 1975 5
Average pH of Killarney Area Lakes, 197
Tomato Juice
Average pH of Rainfall, Toronto, February 1979 4
Apple Juice 3
Vinegar
Lemon Juice
Most Acidic Rainfall Recorded in US 2
Battery Acid 1
0
ACID RAIN
INCREASINGLY ALKALINE
INCREASINGLY ACIDIC

Acid Rain, House of Anansi Press


MINIMUM
MAXIMUM
BELOW 350.00
350.00 375.00
375.00 400.00
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425.00 450.00
ABOVE 450.00
SYMBOLS
1
2
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6
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9
-6-
SYMAP

LAKE CHAMPLAIN BASIN
Rainfall Acidity in PH Units
JUNE, 1982
CITIZEN'S ACID RAIN MONITORING PROGRAM

Lake Champlain Committee
14 South Williams Street
Burlington, Vermont 05401

THE NEW YORK TIMES,
MONDAY, JULY 26, 1982

Bucket Brigade Joins the Battle Over Acid Rain

By RALPH BLUMENTHAL
Special to The New York Times

KEESEVILLE, N.Y. — The latest weapon in the Northeast's halting war on acid rain sits on a wooden stake here in Charles Gibson's backyard overlooking Lake Champlain. It is an empty quart-size plastic refrigerator container, the kind used to store leftover pea soup or half a pickle.

When it rains, the drops collect in the container. Afterward, Mr. Gibson, a 61-year-old retired history professor, measures the water in millimeters and tests the acidity with chemically treated paper.

"It's not an extremely sexy piece of equipment," said Anne K. Baker, the founder and executive director of the Lake Champlain Committee, which is based across the lake in Burlington, Vt. But at least, she said, "it gives people the feeling that they're doing something."

Twice a month, along with about 150 similarly armed volunteers scattered over the 8,234 square miles of the Lake Champlain drainage basin, Mr. Gibson forwards his findings to the Lake Champlain Committee for submission to the botany department of the University of Vermont in Burlington.

By tabulating and mapping the admittedly rough results, plant ecologists hope to gain new insights into the origins and effects of a long mysterious blight of airborne pollution known generically as acid rain. Such pollution has been linked to the disappearance of fish in hundreds of Adirondack mountain lakes and, most recently, to the wholesale death of red spruce trees on nearby peaks.

The phenomenon has also sparked a host of regional and international disputes over efforts to find and limit sources of pollution, and the issue remains a focus of controversy in Congressional efforts to renew the Clean Air Act.

Last Thursday, the Senate Environment Commit tee approved a bill that would require 31 states to reduce sulfur emissions by eight million tons by 1984.

New York and other states in the Northeast lay the blame chiefly on the 80 or so coal-fired power plants in the Middle West that use very high smokestacks to disperse sulfurous emissions. In the upper atmosphere, sulfur dioxide and other pollutants are blown east by weather systems and combine with moisture to fall as contaminated rain, snow and fog.

The New York State Attorney General, Robert Abrams, is suing the Federal Environmental Protection Agency, asserting that the agency has failed to enforce pollution limits in West Virginia, Michigan, Tennessee, Illinois, Indiana, Ohio and Missouri.

Rebuttal on Emissions

The states, the power companies and the E.P.A. have responded that there is no proof that emissions from any particular plant adversely affect conditions in the Northeast — which, they say, has its own sources of pollution. They also argue that restricting burning of coal in the Middle West would entail widespread economic dislocations.

In addition, northeastern Canada has been attributing much of its mounting pollution problem to American sources. Similar cross-border disputes are raging in Scandinavia, Britain and West Germany.

Acidity is measured by pH value on a scale of 0 to 14. A solution of pH 7 is neutral, with 0 the most acidic (battery acid is about pH 1) and 14 the most alkaline (lye is about pH 13). Each full number represents a 10-fold change in magnitude: A solution of pH 3.5 is 10 times more acidic than one of 4.5 and 100 times more acidic than one of 5.5.

Pure unpolluted rainfall is slightly acidic, about pH 5.6, because of normal carbon dioxide in the atmosphere. Some showers in the Northeast, however, have been found to be more than 100 times as acidic.

Although detrimental effects on wildlife and vegetation have been documented by scientists, the exact effects of specific quantities of acid precipitation remain uncertain. A 1980 study by the New York State Department of Environmental Conservation found that more than 80 percent of Adirondack lakes with a surface acidity of pH 5 and below were devoid of fish life. It classified about one-quarter of 849 lakes and ponds surveyed as "critical" from high-acidity and another third as "endangered."

Recently, however, some of the findings have been challenged as inaccurate by a consultant for the Edison Electric Institute, which represents power companies. The state has begun an inquiry into the reliability of the study's figures.

Program Begun Last April

It was to gather data on the acidity of rainfall in the Lake Champlain region of New York, Vermont and Quebec — and, not incidentally, to rally residents around the issue — that the citizens' acid-rain monitoring program was devised last April by Mrs. Baker of the Lake Champlain Committee.

Local newspaper articles and mention of the project on the air by a local television weatherman brought calls and letters from more than 300 people, all of them seeking to be acid-rain monitors.

"I am a retired ship's captain and have been taking weather all my life," wrote Harry F. Wiseman, of Bristol, Vt. He added that he had "wind gauges and all equipment for weather reading but not for acid rain," and he thoughtfully appended a letter of reference from another weather specialist.

Another hopeful, Kitty Hatif, of Orwell, Vt., wrote in: "I'm 32 years old, an avid gardener and very much concerned about this problem. I believe I could do a good job monitoring the rain."

Responses From Canada

Many Canadians responded. Claude Guay of Clarenceville, Quebec, ended his plea, "Hoping to participate in a humanitary commun cause."

The participants, picked ultimately for their diverse locations rather than their fervor, each had to pay $3 toward a pack of pH-testing paper strips and accompanying color chart, instruction booklet and reporting forms; the Vermont Agency of Environmental Conservation picked up another $4.50 a person. Participants were also expected to provide the plastic collection containers, a metric ruler and postage, about $2, to send in the reports on the first and 16th days of each month.

The containers were to be mounted on a stake in a clearing at least 200 feet from a main road and at least 20 feet from overhanging branches or roofs. The simplest way of mounting the collector was to nail one container to the top of the stake as a holder and to place another inside it to collect the water.

Readings were to be taken directly after each rainstorm, although the monitors were not expected to leap out of their beds in the middle of the night.

Still, not all followed directions. One volunteer used a nonregulation cut-down bleach bottle, and others stood their collectors right under trees.

For a proper reading, the pH papers must be left in for just four minutes. But Fred Fink of Willsboro, Vt., a retired corrosion engineer from Ohio, said he had experimented with leaving the paper in for 20 minutes, which would register a more acidic result.

"Four minutes, Fred!" scolded Mrs. Baker.

But dedicated they all are. "If we're gone during a rain, I have my children or neighbors take the reading," said Donald Stacey Jr. of Colchester, Vt., a personnel executive for International Business Machines.

"It seemed like a fun thing to do," said Bill Wessel, a real estate developer in South Burlington, Vt. The project, he added, betokened the growing sophistication of the environmental movement. "It's a shift away from lying down in front of a bulldozer."

'A Rough Sieve'

The experts who will evaluate the project when it ends with the onset of winter in October say they expect to find the data useful if not scientifically perfect. The inexpensive testing paper, for example, only includes a spectrum of pH 2.5 to pH 4.5. This means that rain more acidic than pH 2.5 or less acidic than pH 4.5 will not register on an accompanying color chart.

"It's a rough sieve," said Dr. Hubert Vogelmann, chairman of the botany department at the University of Vermont.

After the first two rounds of reporting, the indication is that the rain's acidity has been near the paper's pH 4.5 limit, although several monitors reported single readings as acidic as pH 3.5. According to Dr. Richard Klein of the botany department, this squares generally with remarkably steady readings of pH 4.1 for rain in the region.

Such readings, according to Dr. Vogelmann, suggest that the atmosphere is so saturated with sulfur and nitrogen oxides that they are not flushed out by repeated precipitation.

In a finding that they term dramatic, Drs. Vogelmann and Klein and a research associate, Tim Scherbatskoy, have discovered that about 50 percent of the red spruce trees counted 20 years ago on nearby Camel's Hump and on other Green Mountain and Adirondack peaks have since died.

They say they cannot conclusively assert that acid precipitation is responsible for the trees' deaths. However, they say, when combined with the atmospheric deposits of heavy metals like aluminum, the acid precipitation, particularly fog, has been shown in laboratory tests to be devastating to the spruce and other conifers.

"They're falling over like tenpins," Dr. Klein said.

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TESTIMONY OF THE ATLANTIC CHAPTER

SIERRA CLUB

BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ON S. 768

November 15, 1983

Presented by Barry B. Boyer

Chairman Stafford and members of the Committee, I am grateful for this opportunity to present our views concerning two provisions of S. 768 which are of great importance to the people and environment of New York State: reductions in the pollutants which cause acid rain, and controls on airborne toxic chemicals.

My name is Barry Boyer, and I am currently a law professor at the State University of New York at Buffalo specializing in health, safety, and environmental regulation. Today, however, I am appearing in a different capacity: as Chairman of the Air Resources Committee of the Sierra Club's Atlantic Chapter. The Atlantic Chapter represents some 20,000 members throughout New York State who consider acid rain one of the most serious treats to our environment. In addition, we have learned through our work with sportsmen's groups, religious organizations, labor unions, and civic and public service groups that the threat to acid rain is a serious concern not only to the environmental community, but also to citizens of all backgrounds and political beliefs.

Public opinion polls confirm this observation. A national opinion survey published by the Opinion Research Corporation in March of this year found that almost 90 percent of the respondents were concerned about the threat of acid rain, and over half of the opinion leaders surveyed felt that the scientific evidence was sufficient to support additional regulation. These feelings are, if anything, even more intense in states like New York where observable damage to the environment has sensitized people to the costs of acid rain. In fact, a recent poll commissioned by the New York State Department of Environmental Conservation found that approximately half of the citizens of the state would be willing to pay an extra $25 per week in their utility bills to stop acid rain - an amount which far exceeds even the most pessimistic cost projections. We hope, and urge, that the Congress will respond to that concern with effective acid rain controls.

As we see it, acid rain is no longer a scientifc problem. A series of recent reports, including two from the National Academy of Sciences, convincingly demonstrate that acid rain is caused by the burning of fossil fuels without adequate controls on sulfur and nitrogen oxide emissions. More significantly, the scientists have concluded that reduction of these emissions will provide a roughly proportional reduction in acid rain. Nor is acid rain control a technological problem, since there are readily available methods of removing sulfur from coal. In Western New York, for example, Rockwell International has successfully demonstrated a dry scrubbing process at Niagara Mohawk's Huntley Station which not only controls emissions of acid rain precursors, but also recovers saleable sulfur byproducts.

If acid rain is not a scientific, technical, or public opinion problem, it most certainly is a difficult economic problem. Those of us who live in the downwind states which are vulnerable to the destructive effects of acidification have become sensitized to the costs of acid rain, and who pays them. These costs are perhaps most visible in sensitive ecosystems like the Adirondacks, where some two hundred lakes have become so acidic that they will no longer support the higher forms of aquatic life. That grim statistic may well double by the end of this decade, as larger, deeper and more accessible lakes succumb to the insidious effects of acid deposition. This threat is alarming enough; but unfortunately evidence is accumulating that acid rain can destroy forests, mobilize toxic heavy metals into the environment, ruin buildings and monuments, and affect agricultureal production. In addition to these direct economic losses, a degraded environment and a declining quality of life can only contribute to economic decline. Already the western Adirondacks are experiencing a population loss which cannot be accounted for by general regional trends, according to a recent study by the SUNY Albany Institute of Government and Policy Studies.

These costs inflicted on New York and other downwind states are literally incalculable, in two senses of the word. As a technical matter, there is no generally recognized methodology for measuring such cost, and no compendium of reliable data to which a methodology could be applied. At best, we are forced to rely on rough estimates of the benefits of acid rain control -- or, more accurately, of the costs of failing to take effective action. Such estimates as we do have indicate that the economic losses run to billions of dollars annually, and are generally commensurate with the costs of controls. Even if all the costs and benefits could be accurately and objectively assessed, however, the acid rain problem should not be treated as a simple question of social cost-accounting. It would be morally myopic for this generation to risk destroying -- probably for all time -- thousands of lakes and streams and hundreds of square miles of some of the most magnificent forest ecosystems in North America, just so that ratepayers in the Ohio Valley can save a few cents per kilowatt hour on their utility bills. Our children, and their children, deserve a better legacy than this.

There is another sense in which a narrow cost-accounting approach can be misleading. Viewed as a statistical problem of costs of controls versus benefits of reducing pollution, acid rain reduction appears to be a zero-sum game in which New York's or Vermont's gains become Ohio's or Kentucky's losses. But the resources which may be destroyed by acid rain are not just local assets. The Adirondack Forest Preserve, though located within New York State and administered by the state government, is no less a national treasure than Yellowstone Park or the Yosemite Valley. Indeed, since they are more easily accessible to the population centers of the East Coast and Midwest, the Adirondacks may well have a more important role in meeting the regional need for recreation, wilderness experiences, and ecosystem preservation. Moreover, Americans are a highly mobile people who enjoy the freedom to change their resident as they see fit. Thus, today's Ohioan may be tomorrow's New Yorker, and vice versa. Moreover, we are all participants in an integrated national economy where gains and losses are not confined to the lcoal region, but rather reverberate through markets and taxing systems in complex, often unforseeable ways.

Thus, it seems to us simplistic to view acid rain as a regional or interstate problem, rather than as a national problem which requires national solutions to spread and equalize the burdens. The extent of the economic impact of controls in the high-sulfur emissions state is a matter of considerable controversy, and experience in other fields of environmental regulation suggests that the higher estimates will ultimately prove to be excessive. Still, the prospect of economic dislocations in the emitter states deserves serious consideration. If it appears to the Congress that these concerns are well founded, we would not oppose a reasonable cost-sharing approach, if this is necessary to achieve essential emissions reductions. We note that the most recent acid rain proposals have begun to address this issue by developing mechanisms to mitigate not only the pollution which causes acid rain, but also the economic burdens of compliance. Whether this is best accomplished through a federal grant program funded by general tax revenues or through some special tax or user fee system, is a question of which we express no opinion at this time.

As you consider the various proposals for dealing with acid rain, we would urge that you keep in mind three simple propositions:

1. We need your help. Recent events have underscored the fact that existing law leaves the State of New York, and its citizens, without any effective way to combat the seventy percent of acid rain precursors which originate out of state. Negotiations and a variety of lawsuits against upwind polluters have thusfar succeeded mainly in demonstrating the loopholes in the present Clean Air Act. Even if these claims are ultimately upheld, it seems doubtful that the courts could successfully impose and monitor a fair, effective control program. Since the Administration has refused to take a leadership position on this issue, the Congress is our only realistic hope for solving the acid rain problem.

2. Time is running out. It would be nice if we had the luxury of waiting ten or twenty years for more perfect scientific information about the mechanisms and effects of acid precipitation; but unfortunately the biological clock is running, and the hour is late. Each thunderstorm, each snowfall, brings a new load of acid to the vulnerable areas of the northeast depleting the land's fragile buffering capacity and altering the chemistry of soils and waters. The National Academy of Sciences has estimated that the number of affected lakes will double by 1990, if current rates of emissions are not curtailed. Each

passing year when nothing is cone increases the risk that this prediction will come true. Any realistic program will require a phased reduction of emissions over a period of years, and inevitable there will be delays and slippage in implementation. We need to get started on a control program now.

3. We need a real program, not a fig leaf. Recent reports have indicated that the Administration is considering targets as low as thirteen to twenty-five percent reduction of sulfur emissions in the eastern United States. As we see it, this is a bit like telling someone who is exposed to three times the lethal dose of a toxic chemical that you're willing to cut his exposure by half; he will still be getting fifty percent more thant is needed to kill him.

Scientists tell us that a fifty percent reduction in acid deposition is need to bring the precipitation within the buffering capacity of the soil, which translates to an annual decrease of 12 million tons of total sulfur loadings in the eastern states. If emissions are not brought below that target, we may well find in a decade or so that we have simply delayed the death of the lakes for a few years, and imposed a very expensive regulatory program which doesn't work. Experience indicates that numerical goals and timetables for pollution abatement, whether established by legislation or by the agencies themselves, usually undergo some slippage in implementation. Thus, S. 768 should adopt a more realistic target of 12 million tons per year reduction in sulfur emissions.

4. There's no such thing as a free lunch. Because the costs of sulfur emissions reductions are concentrated in a few large utilities, while the benefits are dispersed over a large number of individuals and a wide geographic area, the alternative of doing nothing may seem particularly attractive. As previouly discussed, however, there is no way to avoid imposing costs in this situation. The basic choice is either to acquiesce in an inequitable status quo, in which the downwind states are unfairly victimized and the heritage of future generations is destroyed, or instead to seek common solutions to a common problem. We hope that you will choose the latter path.

The Sierra club was very pleased by the provisions that the Committee included in its bill with regard to hazardous air pollutants. I believe that the problems that the EPA has had in listing and issuing national emission standards for pollutants which pose special dangers to public health are at this point well documented. Even the General Accounting Office has now issued a report on the matter.

The Sierra Club endorses the general approach taken by the Comitteee in its provisions that place EPA on a firm deadline for considering substances for listing as hazardous air pollutants and providing more specific guidance to the Agency concerning how to issue standards that start with a best technology but push for better where the public health requires such standards. We recommend some modest but important changes which we believe would improve the Committee version.

On November 6, 1983, EPA Administrator William Ruckelshaus appeared before the House Energy and Commerce Committee to discuss some of the problems EPA has experienced in implementing Section 112 of the Act. During the discussion Mr. Ruckelshaus stated he was confident that by the end of 1985 the EPA could make a determination whether 25 substances now under consideration were hazardous air pollutants within the meaning of Section 112. The Administrator did not condition EPA's ability to meet the schedule on any modification of the current requirements of the Act.

The Committee bill would require an EPA determination on 20 substances within a year after enactment, but require no determination on additional substances until 5 years after enactment. We believe that the opportunity to require these determinations at a faster pace offered by the Administraotr should not be missed. Therefore, we recommend that the EPA in fact be required to make a determination on 25 substances by December 31, 1985. By the Administrator's own words, EPA should be able to meet this schedule regardless of when actual passage of the amendments to Section 112 become law. We would then recommend a dtermination be required on an additional 15 substances be required three years after the expiration of the first deadline. The principal difference between this schedule and the one in the Committee bill is that EPA is required to make a decision on more substances sooner.

In addition, we believe that decisions made by the National Toxicology Program that identify substances as actual or presumed human carcinogens should be given more weight than is provided for in the Committee bill. The National Toxicology Program is our most prestigious scientific body that has been organized to consider questions of carcinogenicity. We believe that when it identifies a substance as an actual or presumed carcinogen, the substance should receive priority consideration by EPA as part of its activities under Section 112. Accordingly, we would recommend that EPA be required to make a determination within a year whether any substance so identified by the NTP is a hazardous air pollutant within the meaning of Section 112. The EPA would be authorized to substitute a decision on a newly identified NTP substance for another substance it intended to make a determination on for purposes of meeting the mandated decision schedule discussed above. This requirement would ensure that NTP identified substances received top priority consideration for control by EPA.

As we all readily recognize, it is the public conern over the fact that millions of pounds of potentailly hazardous chemicals are being generated as air pollutants from hundreds of existing sources that has stimulated the drive to reform Section 112. We believe that the Committee bill does not establish a systematic means to ensure that existing sources in fact control their emissions within the limits of any national emission standards that EPA establishes. The Committee bill simply requires compliance from existing sources within two years and nothing more. We believe that experience with pollution control requirements in all three media has demonstrated that the implementation of a permit system requiring the polluter to specify the means and schedule by which it will achieve compliance is the most effective system for assuring compliance. We recommend that a permit system be established for existing as well as new sources of hazardous air pollutants.

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TESTIMONY OF CAROL LEE BAUDLER

SIERRA CLUB NORTH STAR CHAPTER, MINNESOTA

BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ON S. 768

November 15, 1983

My name is Carol Lee Baudler representing the North Star Chapter of the Sierra Club in Minnesota. I appreciate the opportunity to appear before the Committee. Today I would like to talk a bit about the acid rain problem in Minnesota but first I would like to discuss the Sierra Club's views regarding the smelter provisions of S. 768.

Not only did the Committee bill reduce the protections afforded clean air areas by weakening the PSD program, it eliminated the prospect of ever adequately controlling emissions from the single largest category of industrial emitters in the West. The special provisions for non-ferrous smelters would allow the continued release of Sulfur oxide emissions that violate health standards, and are major contributors to growing visisbility impairment and acid rain in the West.

The Western smelters emit 1.1 million tons of SO2 per year, nearly 80 percent of such emissions generated by sources west of the Continental Divide. Because of the cyclical nature of the smelting markets, this industry has received special exemptions from the requirements that apply to all other industrial emitters. While it is appropriate for Congress to ensure that no undue hardships are placed upon any individual industry by the Act's requirements, any relief provided must ensure that compliance is eventually achieved and that the industry does the best it can in emissions reduction during the interim.

The Committee bill extends the currenlty authorized nonprimary smelter orders (NSOs) for an additional 5 years, allowing operation under such orders until 1993--23 years after initial passage of the Clean Air Act.

Yet, the new privisions provide no assurance that after the NSOs end, facilitites operating under such orders will have made the necessary investments to ensure they will be in compliance with Clean Air Act requirements. Also no interim requirements are placed on these facilities to control any more emissions than they control today. Yet, some smelter facility owners have already stated that they will close rather than install necessary controls. Therefore, while the committe provisions purports to establish a system of forbearance in exchange for eventual compliance, the system is in fact a legal fiction that allows open-ended non-compliance. Newer smelter facilities are given every incentive to avoid compliance in order to remain competitive with older platns that are not required to do any emissions control.

We believe that the Committee re-write of the NSO provisions simply extends the compliance deadline by five years and ensures that we will be in exactly the same untenable position in 1988 as we are today. We urge the Committee to examine a whole new approach that would focus on requiring a series of commitments from facilities currently operating under or seeking NSOs that would result in both modernization of facilitites and installation of controls necessary to achieve compliance by 1988. Any extensions of compliance beyond 1988 should be predicated on good faith efforts before such date. Further extensions must be very limited as to the facilities to which they apply, and again predicated on firm, enforceable commitements to modernize and control.

The second modification the Committee bill makes to smelter requirements is to permanently allow the use of "supplemental control systems"(SCS) as a means of compliance with the Act. SCS are in fact a misnomer, since they do not require contols at all. SCS simply permits a curtailment of plant operations to reduce emissions during ar stagnation conditions that cause emissions to concentrate in levels that exceed national ambient health standards. Current law requires the use of this technique by facilitites operating under an NSO until final compliance is achieved. The Committee bill would allow any smelter to use this technique during 5 percent of the year.

We urge the Committee to drop the provisions of the bill which allow the use of SCS on a permanent basis. Current use of this system clearly indicates that it simply does notwork. Air quality data reported by the state of Arizona shows that the six smelters using SCS have exceeded one or more of the SO2 health standards every year for which air quality data are available. During 1981, the 3 hour standard was exceeded 141 times, the 24 hour standard exceeded 57 days in five of the communities, and the annual standard in two of five communitites. This experience clearly indicates that the residents of these communities are simply not receiving the health protection to which they are entitled. SCS simply does not work.

In addition, the use of SCS enables smelters to avoid the installation of continuous emissions reduction technology that would reduce SO2 emissions every day of the year, not just on air stagnation days. The Committee bill would in effect allow a vast increase in annual SO2 emissions compared with existing law. For instance, we believe that Kennecott's McGill smelter in Nevada could avoid installing any additional continous emission controls under the Committee bill. This would allow about 60,000 tons of SO2 per year which would be controlled under provisions of the existing law. The Phelps Dodge smelters in Douglas, Arizona would be allowed to emit 110,000 tons per year more of SO2 than current law would allow. Virtually every other smelter would be allowed to increase its annual SO2 emissions, although the increases would not be as dramatic as the examples described above.

These increases of emissions will only exacerbate visibility and acid rain impacts that will be very difficult to control in light of the aggresive development of energy resources that is expected in the West over the next two decades.

This is impportant to me as Minnesotan because of the increase in pollution likely to be borne to Minnesota on prevailing Westerly winds. Minnesota receives air pollution generated in the highly industrialized states to the east,as well as states west of its borders. The states produce only about 1% of the annual U.S. emmissions of sulphur dioxide and nitrogen oxides. However, the acid-sensitive areas of north eastern and parts of north central Minnesota receive an average rainfall of PH 4.6, ten times more acidic than normal rain.

Between 2500 and 3700 of Minnesota's 12,000 lakes are potentially susceptible to acidification. Of these lakes, 500-1000 are extremely sensitive to acid rain. To date no lakes in Minnesota have acidified, but the acidity of rain and the sulfate depostion rate is now at or above levels which have caused acidification in Scandinavia which is geologically similar to Minnesota. Recent studies have shown some lakes may be experiencing the initial effects of acidification, but data is needed to confirm this.

Similarly, further study is needed to determine the effects of acid rain on Minnesota's fishing and tourism industry, agriculture and forestry.

We are proud of our reputation as a clean state. We have some of the strictest air pollution laws in the nation. A recent study by the Conservation Foundation rate environmental protection by the state as #1 in the nation.

In 1979 the Minnesota Pollution Control Agency (MPCA) formed a statewide task force to investigate acid rain. In 1980 the North Star Chapter of Sierra Club worked for passage of the Acid Precipitation Act mandating a 1 year acid rain study to be conducted by three state agencies, the MPCA, the Department of Natural Resources (DNR) and the Minnesota Department of Health. Under the study research and monitoring programs were conducted to determine the effects of acid rain on Minnesota's resources. Sierra Club then worked with MPCA to pass the 1982 Minnesota Acid Deposition Control Act, requiring MPCA to:

- Identify areas of Minnesota sensitive to acid rain
- Develop an acid deposition standard designed to protect those areas
- Adopt an acid deposition control plan to attain and maintain the acid deposition standard, addressing emission sources within Minnesota and

outside the state

* Ensure that in-state emission sources are in compliance with the acid deposition control plan

Minnesota is continuing its leadership on acid rain control and monitoring programs as well, signing an agreement with Ontario to combine research efforts.

But Minnesota cannot deal with this important problem alone.

We need Congressional action now to pass a strong acid rain bill requiring a 12 million ton reduction in acid deposition. And we urge passage of a strengthened reauthorization of the Clean Air Act to control and prevent air pollution.

In October, Senator Durenberger introduced another acid rain control bill, S. 2001. We commend the Senator for taking a strong stand on the need for at least 12 million tons in SO2 reductions. We recognize that it is more difficult for Republican Senators to openly break with the Administration, which has yet to endorse any reduction program. Senator Durenburger's bill would obtain 12 to 13 million tons of reductions over 10 years. In addition it provides a unique system for financing a significant portion of the capital costs of installing technoloby to control SO2 emissions. We believe Senator Durenberger is providing important leadership on this issue by steadfastly aiming at the 12 million ton reduction goal and offering alternative means of achieving it.

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AMERICAN LUNG ASSOCIATION
The Christmas Seal People ®

S. 768, THE CLEAN AIR ACT AMENDMENTS OF 1983

Testimony Presented by

Thomas Godar, M.D.

on behalf of

American Lung Association

Senate Committee on Environment and Public Works

Washington, D. C.

November 15, 1983

Mr. Chairman, members of the Committee, I am Dr. Thomas Godar, Director of the Pulmonary Disease Section at St. Francis Hospital and Medical Center, Hartford, Connecticut; Associate Professor of Medicine, University of Connecticut School of Medicine and Yale University School of Medicine, and in the active practice of chest medicine.

As Chairman of the National Air Conservation Commission, I am testifying on behalf of the American Lung Association. The ALA is the nation's oldest voluntary health association. We began by working for the control and prevention of tuberculosis and can trace our concerns about healthful air quality back to programs conducted by the New York City TB Association in the 1920's.

Today our mission encompasses the broad spectrum of the prevention and control of all lung diseases. These diseases constitute a devastating public health problem in the United States. Chronic Obstructive Pulmonary Disease and lung cancer are the most rapidly increasing of all leading causes of death. We believe that a review of the scientific literature on air pollution demonstrates clearly the contribution of air pollution to the development and/or exacerbation of the various lung diseases. It is on the basis of our knowledge of the adverse health effects of air pollution, that the ALA places high priority on a reauthorization of a Clean Air Act which will continue the progress towards clean and healthful air quality in all regions.

The ALA has had the opportunity to present testimony on the Clean Air Act before this Committee on two previous occasions. In recognition of the diversity of concerns expressed in this debate, we will reiterate our emphasis on the public health concerns addressed by the Act. In our previous testimony we submitted for the record our publication, The Health Effects of Air Pollution, which is a state-of-the-art review of the scientific evidence available on the contribution of air pollution to lung disease. Since publication of this document the body of evidence demonstrating health effects has grown considerably. The ALA has published a report reviewing recent research findings on sulfur oxides and I would like to enter into the record this report, "Sulfur Oxides and Public Health: Evidence of Greater Risks." Quoting from the report, "Scientific journals report effects on pulmonary function from short term exposure to sulfur oxide at 0.25 ppm and to sulfuric acid at 100 $\mu g/m^3$, leaving little if any margin of safety for protecting sensitive individuals." We conclude that, "So much attention has been given to ecological effects--acid rain--that many have overlooked the effects on public health that this long-range transport poses."

We have previously commented on S. 768, first when it was reported from this Committee in November, 1982 as S. 3041, and in March 1983 when it was reintroduced. We commend you, Mr. Chairman and the co-sponsors of S. 768 for preserving the public health principles in the Act by retaining the provisions for health-based National Ambient Air Quality Standards and the Standard-setting process.

The NAAQS are the conerstone of the Act and have been the driving force responsible for progress towards improving the quality of our nation's air resources. Retention of these provisions recognizes three essential concepts: first, the standard must protect against adverse health effects in all population groups including the particularly sensitive subpopulations; second, the margin of safety is necessary to compensate for gaps in our knowledge about the effects of air pollution; and third, the standard must be health-based with cost considerations separated from the identification of adverse effects and the development of a protective standard.

A critical factor in the progress towards clean air has been the congressionally mandated deadlines to acheive the NAAQS. However, some areas subject to the Act's 1982 deadlines failed to achieve the standards on time. A small portion of the country subject to the Act's 1987 deadlines are also expected not to achieve the standards on time. S. 768 responds in a prudent manner by providing limited extensions where needed. We believe caution must be exercised to assure that only the minimum extra time needed for achieving the standards is allowed and that these provisions be explicit to prevent any "backsliding" in state air pollution control programs.

I would like to focus my remaining comments on provisions for the control of hazardous air pollutants. Although fewer people are exposed to hazardous air pollutants than are exposed to criteria pollutants, the potential adverse effects can be anticipated to be far more serious. Chronic exposure to pollutants in this category can contribute to the development of cancer and other serious illnesses. An accurate assessment of the extent of death and illness from these pollutants cannot be made with certainty. A fundamental concept in the Act's provisions for control of these pollutants is that of a precautionary approach. Unfortunately, EPA's progress in controlling hazardous air pollutants does not exhibit such an approach.

Effective control of hazardous air pollutants is crucial for the protection of public health. S. 768 retains the current law's definition of a hazardous air pollutant and the program's precautionary public health principles. The bill would strengthen section 112 by requiring that EPA identify 40 substances for which the Administrator shall make a decision to list as hazardous and includes a schedule for completion of the listing process. The bill also provides for designating these substances as hazardous by law if EPA fails to make decisions as directed.

The ALA believes the provisions in S. 768 for control of hazardous air pollutants can be improved in three areas: first, by accelerating the process for decision making on listing substances as hazardous air pollutants; second, by clarifying that the best technology is required and as a minimum that standards should require each source to use controls at least as effective as the best already used by similar sources; and third, by establishing a formal permitting process for cleaning up existing sources as well as new soruces.

I have confined my remarks to the public health issues. We recognize that the health benefits of the Act cannot be separated from other provisions including requirements for nonattainment areas, the enforcement program, and the program for controlling mobile source pollution. The ALA urges caution as the Committee addresses these sections of the Act. A prudent public health policy can allow for no weakning of the Act's current provisions. The Clean Air Act has led to substantial improvements in the quality of our nation's air resources and further progress can and should be made.

Thank you for this opportunity to present our views.

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AMERICAN LUNG ASSOCIATION
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SULFUR OXIDES AND PUBLIC HEALTH: EVIDENCE OF GREATER RISKS

Prepared by:

KAWECKI ASSOCIATES
Chevy Chase, Maryland

August 1983

ACKNOWLEDGEMENTS

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PREFACE

During the past two decades, researchers have found harmful health effects occurring at lower and lower levels of air pollution. This trend is attributed to our growing ability to measure and understand air pollution and its effects. Historically, the standards for safe amounts of sulfur oxides and particulate matter in the air were based primarily on the results of epidemiological studies. While controlled studies on humans showed some of the same kinds of health effects observed epidemiologically, the exposure levels required to evoke these responses were much higher -- subjects showed virtually no measurable response to sulfur dioxide at levels lower than 1 ppm or to sulfuric acid concentrations below 1000 $\mu g/m^3$. Today's research findings contrast sharply with these earlier controlled studies. Scientific journals report effects on pulmonary function from short-term exposure to sulfur dioxide at 0.25 ppm and to sulfuric acid at 100 $\mu g/m^3$, leaving little, if any, margin of safety for protecting sensitive individuals. Because these levels approach those that may occur in the ambient air, prudence dictates reexamination of the control strategies for sulfur emissions from the burning of fossil fuels.

EXECUTIVE SUMMARY

The emissions of sulfur-bearing compounds from burning coal and oil need to be controlled more effectively. Despite Government efforts, nearly 30 million tons of sulfur oxides are emitted from these sources into the air each year in the United States. These pollutants remain airborne for long periods of time and may travel great distances, creating high concentrations far from emission sources. Atmospheric levels of sulfur dioxide, sulfuric acid, and sulfates are high enough in some areas to be harmful to the public.

Sulfur dioxide is the main sulfur product of combustion. As the sulfur content in the fuel increases, so does the level of sulfur oxides. In the air, sulfur dioxide reacts over time to form sulfuric acid and other sulfate salts. Sulfur dioxide itself is toxic. In laboratory tests, exposure to the gas for less than one hour at concentrations of 0.25 to 0.5 ppm was found to constrict the respiratory airways of asthmatics and also to cause wheezing and shortness of breath. Normal subjects have also shown respiratory symptoms when exposed to sulfur dioxide, but at higher concentrations. Sulfuric acid is an extremely reactive substance which, like sulfur dioxide, has been found to impede the respiratory system's ability to clear itself of foreign matter and to impair breathing functions in laboratory subjects. Brief exposure to sulfate particles at concentrations as low as 100 $\mu g/m^3$ has likewise shown effects on airway resistance and respiratory volume. In the ambient air, actual exposure may be much longer, since elevated sulfate levels can persist for 12 hours a day. Combinations of sulfur oxides, ozone, and other major pollutants may be more hazardous than each of these substances alone--laboratory tests have not resolved the question. However, a number of epidemiological studies show clear evidence of increased sickness and mortality in the population at large caused by elevated concentrations of sulfur dioxide and particulate matter in the ambient air. On a national scale, at high pollution levels, fractional increases in sulfur dioxide and sulfate concentrations may well take an increasing toll in illness and death, particularly among the elderly, persons with respiratory and cardiovascular disease, and other susceptible individuals.

INTRODUCTION

Sulfur is one of the most pervasive pollutants in the environment. In the United States alone, nearly 30 million tons of sulfur oxides, primarily sulfur dioxide (SO_2), are emitted annually into the atmosphere by burning fossil fuels. Although Federally mandated control programs have generally reduced SO_2 levels over the past 10 to 15 years, concentrations of this gas and associated sulfates remain elevated in some nonurban areas. This situation can only be worsened with the increased burning of high-sulfur fuels. Moreover, some control schemes may have made matters worse. Noteworthy is the use of tall smokestacks, intended to improve local air quality, which have created problems with long-range transport of sulfur pollutants. Recent evidence suggests that adverse effects from short-term exposure to sulfur compounds occur at levels much lower than those previously reported, indicating that the health of a large segment of the population may be in jeopardy.

CONCENTRATIONS

The combustion of coal and oil produces a variety of air pollutants, of which SO_2 is among the most abundant. Once emitted, this gas reacts in the atmosphere to produce compounds such as sulfuric acid (H_2SO_4) and sulfate salts, which exist as microscopic particles up to 50 times smaller than the diameter of a human hair. These particles form aerosols and remain suspended in the air for considerable lengths of time. As such, they may be carried by the winds hundreds of miles from their source.

Sulfate compounds dominate the mass of fine particles (those less than 1 µm in diameter) in most areas of the United States, averaging 35 percent of the total fine-particle mass.[1] The acidity of aerosol particles correlates closely with sulfate concentrations, with sulfuric acid comprising 20 to 45 percent of the total sulfate mass.[2,3]

Ambient air concentrations of fine particles have, at best, remained unchanged over the past several years; in many areas, increases have occurred. Generally, the highest levels occur during the summer months. These levels are driven upward by the sulfate component.[4-6]

Annual concentrations of sulfate particles in the United States average 9-13 μg/m^3, while levels twice as high may occur over large areas of the Northeast during the summer, lasting for 12 or more hours.[3,7-9] Moreover, the northeastern United States may also experience episodes during which sulfuric acid concentrations exceed 25 μg/m^3.[3] Thus, the Northeast may experience both annual and short- term elevations of sulfate pollution, particularly during the summer. Additionally, SO_2 concentrations are substantially higher than sulfate levels in large portions of the Northeast, but unlike sulfate, SO_2 levels are highest in the winter months. Nonurban average and peak ozone levels are also elevated in the Northeast, with the highest levels occurring during the summer months.[7]

HEALTH EFFECTS

To pinpoint and analyze the effects of pollutants, researchers conduct toxicological studies with experimental animals, clinical studies of humans exposed under controlled conditions, and epidemiological studies of large populations exposed under highly variable ambient conditions. Perhaps the most dramatic evidence of the hazards of sulfur dioxide and particulate matter in ambient air comes from studies of severe pollution episodes, such as those causing deaths in Belgium's Meuse Valley, in Donora, Pennsylvania, and in London. The worst London episode occurred in December 1952 when a "killer fog" of sulfur dioxide, sulfates, and smoke killed some 4,000 people in one week.

Health studies have focused on the impact of sulfur pollutants on the clearance of foreign matter from the respiratory tract and defenses against infectious agents, respiratory mechanics, aggravation of respiratory and cardiovascular disease, and mortality. While many laboratory studies have used unrealistically high concentrations in investigating these effects, this paper primarily reviews research dealing with exposure in the ambient air range. In addition, because this report is a summary of the potential hazards associated with the long-range transport of sulfur oxides, only a sample of the voluminous material available is reviewed here. Emphasis is placed on the findings of the recent Air Quality Criteria for Particulate Matter and Sulfur Oxides[10], supplemented by the latest reported research.

The next section of this report describes how sulfur pollutants enter and become deposited in the respiratory system. This section is followed by a review of pertinent health-effect studies of sulfur compounds singly and in combination with other air pollutants. Subsequent sections estimate risk and draw conclusions about effects on human health.

Biological Dose and Uptake

The respiratory system is the major route of entry for air pollutants. When pollutants are inhaled, the material is distributed to various regions of the respiratory tract (see figure 1). The effects of the retained pollutants depend upon their form (e.g., gas vs. aerosol), interaction with other pollutants, and biochemical and physiological characteristics of the lung.

SO_2 is readily absorbed on the moist surfaces of the nose and upper respiratory passages, reducing the amount of penetration into the deep lungs. For example, at a concentration greater than 1 part per million (ppm), SO_2 is almost completely absorbed in the nose during rest. Penetration into the lower respiratory tract increases with

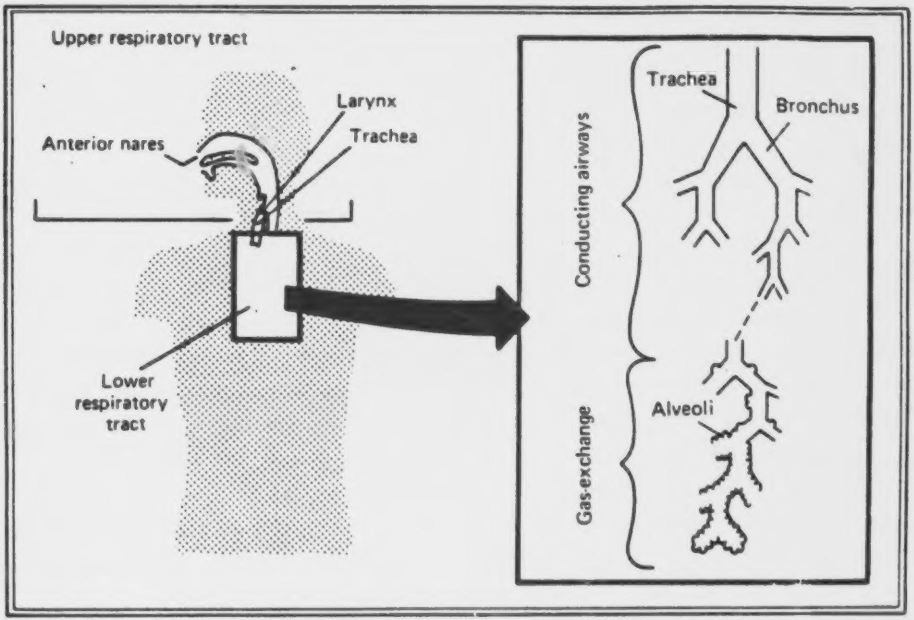

Upper respiratory tract
Anterior nares
Larynx
Trachea
Lower respiratory tract
Conducting airways
Gas-exchange
Trachea
Bronchus
Alveoli

Figure 1. Diagrammatic representation of the human upper and lower respiratory tract.[12]

mouthbreathing, elevated breathing rates, and the presence of particles in the air (which act as carriers).[11] Once absorbed in the moist linings of the upper airways, SO_2 goes through a series of chemical reactions to form sulfates, which are eventually secreted.

The penetration of particles into the respiratory tract varies with particle size. Particles less than 1 μm in diameter, which include sulfate particles, are deposited throughout the lung, but larger particles tend to be trapped in the upper airways. Once inhaled, some types of particles absorb water and can grow from less than 1 μm in diameter to 4 μm in diameter. About 5 to 25 percent of these particles are deposited in the upper and middle airways (tracheobronchial region), while about the same percentage of smaller particles are deposited in the deep lung (alveolar region).[10] As with SO_2, the deposition pattern is affected by the type of breathing: Inhalation by mouth permits greater penetration than does breathing by nose, since the former is a much less effective "scrubber" than the latter.[7] But on the other hand, mouthbreathing tends to neutralize sulfuric acid, owing to the presence of ammonia in the mouth cavity.[13,14]

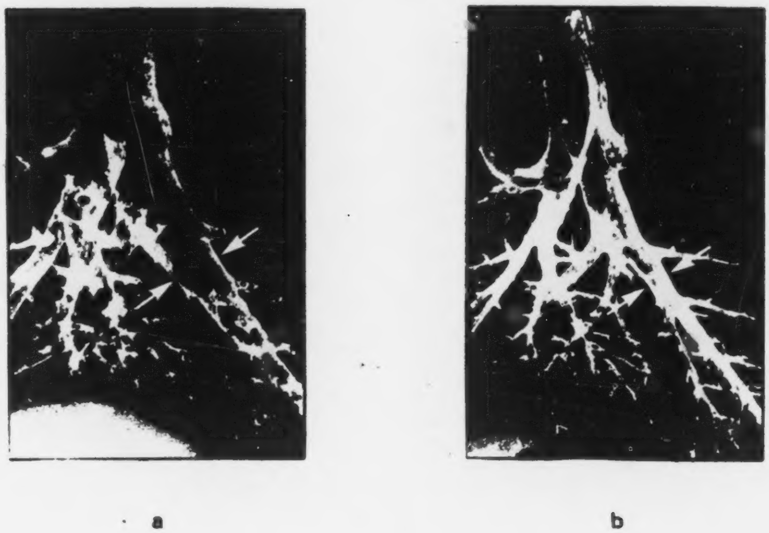
SO_2 is absorbed by certain types of particles in a way that may potentiate its effects. Further, the gas is transformed into sulfur trioxide in the air and (in combination with moisture) forms sulfuric acid. H_2SO_4 droplets can be converted to sulfates in the presence of ammonia in the ambient air.

Toxicological Studies

Although inhaled sulfur compounds readily enter the circulatory system, their main effect occurs in the respiratory tract. Animal studies indicate that the most likely effect of 1-hour exposure to sulfur dioxide levels such as may occur during peak air-pollution episodes is narrowing of the bronchial air passages (bronchoconstriction) (figure 2). This response, which may be due to reflexive contraction of the muscles in the bronchus, apparently involves release of acetylcholine or histamine.[15-17]

The animal studies listed in table 1 indicate that exposure to SO_2, sulfate particles, or H_2SO_4 affect the mechanisms by which the respiratory tract clears itself of foreign matter.[18-25] When sulfuric acid is combined with ozone, increased susceptibility to infections has been observed; when combined with carbon, which also occurs in ambient air, increased mortality has been seen in mice.[26,27]

Figure 2. The photographs depict the narrowing of the airways in the lungs of a dog: (a) before and (b) after bronchoconstriction.[32]



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Sulfuric acid generally appears to be more irritating than any of the sulfate salts, whose toxicity varies with chemical composition. Guinea pigs show increases in airway resistance in response to short-term exposure to sulfuric acid at a concentration of 100 $\mu g/m^3$.[28,29] This degree of sensitivity to low levels of sulfur oxides has not been observed in other animal species, but has been observed in humans.[16,30,31]

The effects of chronic exposure to sulfuric acid and sulfates are less certain than those of acute exposure, but various responses have been observed, including changes in respiratory mechanics.[33,34] Duration of exposure, particle size, and chemical composition all appear to be important in determining changes in pulmonary function at low concentrations.

TABLE 1
LABORATORY STUDIES

Substance	Subjects	Exposure	Effect	Reference
Animal Toxicology				
Sulfuric acid	Guinea pigs	100 μg/m^3, short-term	Increased airway resistance.	28,29
Sulfuric acid	Various experimental animals	100 μg/m^3, short-term	No increase in airway resistance.	30,16
Sulfuric acid	Guinea pigs	100 to 1000 μg/m^3, long-term	Altered respiratory mechanics.	33
Sulfuric acid	Monkeys and other animals	$\geq$190 μg/m^3, short- and long-term	Altered mucociliary clearance.	20-24
Controlled Human Studies				
SO_2	Asthmatics	0.25, 0.5, and 1.0 ppm	Bronchoconstriction in some subjects at all exposure levels; wheezing and shortness of breath in some subjects.	17,38-41
SO_2	Asthmatics	0.25 ppm	No bronchoconstriction.	42
SO_2 and cold, dry air	Asthmatics	0.5 ppm	Significant change in pulmonary function.	43

TABLE 1 (continued)

Substance	Subjects	Exposure	Effect	Reference
SO_2	Humans	1, 5, and 25 ppm	Increased incidence of colds within 1 week of exposure to virus.	44
SO_2	Humans	>1 ppm	No increased incidence of colds after exposure to virus.	45
SO_2	Healthy adults	1.0 to 2.5 ppm	Possible broncho-constriction.	35-37
SO_2	Humans	1-3 ppm	Changes in pulmonary function.	46
Sulfuric acid	Normal and asthmatic subjects	75 μg/m^3	Pulmonary function changes in 2 of 12 subjects; no group response.	86
Sulfuric acid	Asthmatic adolescents	100 μg/m^3	Significant changes in pulmonary function.	31
Sulfuric acid	Humans	100, 300, and 1000 μg/m^3	Trachoobronchial clearance increased at 100 μg/m^3, decreased at 1000 μg/m^3, no change at 300 μg/m^3.	48
Sulfuric acid and ammonium bisulfate	Asthmatic adults	500 μg/m^3	Reduced airway resistance and forced expiratory volume.	49

TABLE 1 (continued)

Substance	Subjects	Exposure	Effect	Reference
Mixed Pollutants				
SO_2 with O_3	Humans	0.37 ppm (SO_2), 0.37 ppm (ozone), for 2 hours	Increased severity of respiratory symptoms and pulmonary function changes caused by ozone alone.	50,51
SO_2 with O_3	Normal and asthmatic subjects	0.37 ppm (SO_2), 0.37 ppm (ozone), for 2 hours	Some measures of lung function showed effects over those of ozone alone.	57
SO_2 with O_3	Young men	0.4 ppm each, at $\geq 25^{o}C$ and $\geq 45\%$ relative humidity	No synergistic effects.	54,56
SO_2 and NO_2	Normal and asthmatic subjects	0.5 ppm each	No synergistic effects.	42
SO_2, NO_2, and O_3	Healthy humans	5.0 ppm (SO_2), 5.0 ppm (NO_2), 0.1 ppm (ozone)	No synergistic effects.	61
SO_2 with inert particles	Humans	5 ppm	Reduced mucus flow rates	47
Sulfuric acid, O_3 and carbon particles	Mice	900 µg/m^3, (H_2SO_4), 0.1 ppm (O_3), short-term	When combined with ozone increased susceptibility to infection; when combined with carbon, increased mortality.	26,27

Human Clinical Studies

Clinical studies with human subjects allow researchers to investigate the responses of both healthy and special at-risk individuals to different modes and durations of exposure. Such studies have shown that SO_2 affects various physiological functions, including sensory processes, perceptions of irritation or pain, and respiratory function. The health significance of sensory responses appears to be minor. In healthy subjects at rest, respiratory and cardiovascular responses have been consistently observed at exposure levels of 5 ppm. The findings of several investigators suggest potentiation of SO_2's airway effects with mouthbreathing and increased exercise levels, or both. Studies suggest bronchoconstriction in healthy adults orally breathing SO_2 concentrations of 1.0 to 2.5 ppm.[35-37]

Of greater concern is the impact of SO_2 on hyperreactive individuals--those particularly susceptible to airway constriction. Such individuals include asthmatics and persons with disorders such as hay fever and other allergies.

Systematic study of the effects of SO_2 on asthmatics was initiated in 1980, when researchers observed bronchoconstriction, sometimes with wheezing and shortness of breath, at concentrations less than 1.0 ppm. In some asthmatics, bronchoconstriction occurred at levels as low as 0.25 ppm.[17,38-41] In another study, however, no effects were noted at 0.25 ppm.[42] Recently reported research shows that 0.5 ppm SO_2 (the lowest level administered) potentiated the response of asthmatics to cold, dry air.[43] This group of experts concluded that "people with asthma may be more sensitive to the bronchoconstrictor effects of ambient SO_2 in cold, dry environments than in warm, moist environments."

The heightened response of asthmatics to SO_2 may be due in part to increased respiration caused by the initial irritancy of the gas. The findings that people with asthma and disorders such as hay fever are more sensitive to SO_2 and that this sensitivity is increased by mild exercise are consistent with the theory that bronchial hyperreactivity is in part associated with an increase in reflexive responses in the airways.

Mixed results have been reported on the effects of SO_2 on clearance in humans. An increased incidence of colds has been noted within one week of exposure to 1, 5, and 25 ppm SO_2.[44] Although the same researchers later noted no increase in colds in subjects exposed to SO_2 and a rhinovirus, it was noted that the virus was innoculated in a region of the nose where clearance is unaffected by SO_2.[10,45] In other work, recovery from mild upper respiratory infections was impeded in subjects exposed to

5 ppm SO_2 for several days.[46] With combined SO_2 and particle exposure, nasal mucus flow rates were reduced at 5 ppm and greater concentrations.[47]

Inhalation of sulfuric acid mist (0.35 to 5.0 mg/m^3) increases respiratory rate and decreases airflow rates and breathing volume, according to some studies with healthy adults. Other studies have indicated that pulmonary function is almost totally unaffected by 0.1 to 1.0 mg/m^3 sulfuric acid for 10 to 120 minutes. One researcher found that the bronchoconstrictor action of carbacol was potentiated by sulfuric acid and sulfate aerosols generally in proportion to their acidity. One study found that mucociliary clearance of the trachea and bronchus was increased at 100 µg/m^3 sulfuric acid, unaltered at 300 µg/m^3, and decreased at 1000 µg/m^3.[48] The decreased clearance rates, while transient, raise the possibility of more persistent or chronic depression of clearance with repeated exposure to the same concentrations of sulfuric acid.

In studies with asthmatic subjects, changes in airway function have been demonstrated after exposure to sulfuric acid at concentrations less than 1000 µg/m^3. At 500 µg/m^3 and higher, reduction in airflow and the volume of air that can be exhaled have been observed in adult asthmatics after sulfuric acid and ammonium bisulfate exposures.[49] In a group of adolescent asthmatics exposed at rest for only one-half hour, followed by 10 minutes of moderate exercise, significant changes in pulmonary function occurred with a sulfuric acid concentration of 100 µg/m^3.[31]

An important question is whether SO_2 and sulfuric acid interact synergistically with other air pollutants, particularly ozone--that is, whether the effects of these combined pollutants are greater than the sum of the effects of each alone. A few studies have reported such synergistic effects on respiratory symtoms and pulmonary function. But the results of these studies have been questioned on statistical and methodological grounds.[50-53] Other researchers have found no evidence or limited evidence of synergistic effects between ozone in normal subjects between SO_2 and NO_2, or between SO_2, NO_2, and ozone.[54-61] The question remains unresolved.[11]

Epidemiological Studies

Several epidemiological investigations of air pollution episodes in London during the 1950's and 1960's are summarized in Table 2. Collectively, they appear to provide a reliable basis on which to estimate ambient air levels of SO_2 and particles at which

TABLE 2
EPIDEMIOLOGICAL STUDIES OF ACUTE EXPOSURE TO AMBIENT AIR LEVELS OF SO_2 AND PARTICULATE MATTER* IN LONDON[10]

		24-hr average pollutant level (µg/m^3)		
Type of study	Effects observed	Particulate matter	SO_2	Reference
Mortality	Clear increases in daily total mortality above a 15-day moving average among the elderly and persons with preexisting respiratory or cardiac disease during the winter of 1958-59.	≤1000	≤1000	82,87
	Analogous increases in daily mortality during 1958-59 to 1971-72 winters.			88
	Some indications of increases in daily total mortality during the 1958-59 winter, with greatest certainty of increases occurring at particulate and SO_2 levels above 750 µg/m^3.	500-1000	500-1000	82
	Analogous indications of increased mortality during 1958-59 to 1971-72 winters, again with greatest certainty at particulate and SO_2 levels above 750 µg/m^3 but indications of small increases at particulate levels <500 µg/m^3 and possibly as low as 150-200 µg/m^3.			88
Morbidity	Worsening of health status among chronic bronchitis patients during winters from 1955 to 1960.	≤250-500*	≤500-600	89, 90
	No detectable effects in most bronchitics; but worsening of health status among highly sensitive chronic bronchitis patients during 1967-68 winter.	<250*	<500	90

*Concentrations of particulate matter were measured by the British Smokeshade method.

acute effects may occur among groups at risk. The elderly and persons with preexisting cardiorespiratory disease seem to be at greatest risk for acute exposure effects.

However, great care must be exercised in extrapolating from the observed exposure-effect relationships to what might be expected to occur at other times or geographic locations. High humidity levels (fog conditions) occurring jointly with prolonged simultaneous elevations of particles and SO_2, for example, may be required before the most marked mortality effects encountered in London would recur.

Table 3 summarizes studies of chronic exposure to particles and SO_2. The first study listed in the table demonstrates that increased risk for respiratory symptoms and pulmonary function decrements among young children is associated with long-term exposures.[62] However, no clear threshold levels can be discerned from this study, and the possibility of increased risk at such levels can not be confirmed or denied without additional data. The absence of detectable effects 3 years later in the same children or in other children of the same age tends to suggest that such risks are

TABLE 3
EPIDEMIOLOGICAL STUDIES OF CHRONIC EXPOSURE TO AMBIENT AIR, PARTICULATE MATTER, AND SO_2 [10]

Effects observed	Annual average pollutant levels ($\mu g/m^3$) Particulate matter	SO_2	Reference
Likely increased frequency of lower respiratory symptoms and decreased lung function in children in Sheffield, England.	230-301[a]	181-275	62
Apparent improvement in lung function of adults in association with decreased particulate pollution in Berlin, NH.	180[b]	<25-50[c]	63,64
Apparent lack of effects and symptoms, and no apparent decrease in lung function in adults in Berlin, NH.	80-131[b]	<25-50[c]	63,64

[a]Concentration of particulate matter measured by the British Smokeshade method.
[b]Concentration of particulate matter measured as total suspended particles by high-volume sampling.
[c]Estimated.

minimal at exposure levels lower than those shown. The other studies listed in the table involved investigation of small groups of subjects at brief intervals over several years.[63,64] Also, the improvements in lung function noted in subjects from one time to another (apparently as particulate levels decreased) represent only a modest basis on which to estimate ambient levels for health effects in the general population.

Between 1967 and 1975, a series of studies was conducted to assess the effects of air pollutants on communities. The U. S. Environmental Protection Agency titled a portion of these studies the Community Health and Environmental Surveillance System (CHESS). These studies indicated that acute aggravation of asthma and other symptoms in the elderly were associated with 24-hour exposure to sulfate levels of 10-15 $\mu g/m^3$ and SO_2 levels of 200-300 $\mu g/m^3$. Chronic effects were observed at SO_2 levels of 200-400 $\mu g/m^3$, sulfate levels of 7-20 $\mu g/m^3$, and particle levels of 60-165 $\mu g/m^3$. Unfortunately, CHESS studies were defective in design, methodology, and execution. Nevertheless, together they corroborate the notion that elevated levels of SO_2, H_2SO_4, and other particulate matter can be harmful.

ESTIMATES OF RISK

The evaluation of public health risks from air pollution is a seemingly straightforward matter--a series of dose-response relationships are applied to a set of pollution measurements of population exposure. These determinations, however, are subject to considerable disagreement within the scientific community. Effect thresholds, response measures, and dosage estimates are some of the issues debated by pollution researchers. Confounding factors in studies of persons exposed to air pollution include cigarette smoking, activity levels of individuals, and exposure levels indoors vs. outdoors. Still, while opinions differ on the magnitude of effects from exposure to air pollutants, the concensus is that increased air pollution, and in particular increased SO_2 emissions, will be associated with worsened health of the general public. Under severe pollution conditions, each incremental $\mu g/m^3$ increase in sulfate levels may cause 100,000 to 1,000,000 excess deaths in the population, according to various risk estimates.[3,65-67]

To provide a basis for evaluating mortality risk analyses, the following information is noteworthy. Chronic obstructive lung disease, bronchitis, and emphysema accounted for about 2.5 percent of all deaths in the United States.[68] In 1977, these diseases accounted for about 45,000 deaths, a 22-percent increase in the age-adjusted rate since 1968. This rate contrasts sharply with an 18-percent decline in death rates from all causes and a 22-percent decline in deaths from heart disease. By recombining data from the 8th ICDA Revision (1968-78) with the 9th ICDA Revision (1978 to present), the statistics show this group of diseases ranking 5th among leading causes of death in the United States.[68] While cigarette smoking is the primary cause of death from these diseases, it does not fully account for this inverted rate.

POPULATIONS AT RISK

The estimated prevalence of chronic obstructive lung disease (primarily bronchitis, emphysema, and asthma) in the United States is reported in the National Center for Health Statistics (NCHS) National Health Interview Surveys of 1970, 1978, 1979, and 1980 (Tables 4 and 5). Chronic bronchitis, emphysema, and asthma combined accounted for over 16 million cases in 1979. Various estimates have been reported on the number

TABLE 4

ESTIMATED ANNUAL PREVALENCE OF SELECTED CHRONIC RESPIRATORY DISEASES REPORTED IN HEALTH INTERVIEWS, UNITED STATES, 1970, 1978, 1979, and 1980.

The percent prevalence rate is given parenthetically for 1970 and 1979 Survey Data* (Number of cases in thousands)

Disease	1970[70]	Rate %	1978[68]	1979[91]	Rate %	1980[92]	Estimated % increase
Chronic bronchitis	6,526	(3.3)	7,064	7,474	(3.5)	7,869	0.2
Emphysema	1,313	(0.7)	2,068	2,137	(1.0)	2,476	0.3
Asthma	6,031	(3.0)	6,035	6,402 8,900[69]	(3.0)	6,802	--
Hay fever and other upper respiratory allergies	10,826	(5.4)	15,516	15,620 26,500[69]	(7.0)	--	1.6

*1970 and 1978 estimates are based on the 8th Revision of the International Classification of Diseases, Adapted. (Chronic Bronchitis 490, 491; Emphysema, 492; Asthma, with or without hay fever, 493.) 1979 and 1980 estimates are based on the 9th Revision. Estimates for 1970 are derived from the entire sample of households; those for 1978, 1979, and 1980 are derived from a 1/6 subsample of households.

TABLE 5
PREVALENCE OF CHRONIC RESPIRATORY CONDITIONS BY SEX AND AGE FOR 1979[91]

Condition	Number of cases, in thousands					% of U.S. population
	Total	Male	Female	<17 years old	>65 years old	
Chronic bronchitis	7,474	3,294	4,180	2,450	1,059	3.5
Emphysema	2,137	1,362	775	13*	990	1.0
Asthma	6,402	3,110	3,291	3,154	1,181	3.0
	8,900[69]					4.0
						0.5-6.6[68]
Hay fever and other upper respiratory allergies	15,620	7,031	8,559	3,154	1,181	7.0
	26,500[68]					12.0

*Estimates below 215,000 are considered statistically unreliable.

of cases of chronic obstructive lung disease. Data collected by the NCHS National Health and Nutrition Examination Survey I in 1971-74 showed that an estimated 7.6 percent of the adult population 18 through 74 years of age reported asthma, emphysema, or chronic bronchitis.[69] The NCHS reported that approximately one-third of the chronic bronchitics and one-half of the asthmatics were under 17 years of age.[70] Evidence of increased sensitivity in asthmatics has been widely reported.[17,31,38,40-43,71]

Infants, children, adolescents, and the elderly comprise the largest sensitive subgroup. Approximately 62.5 million people are under 17 years old and 46.3 million are under 14 years old. In very young children the immune system is immature and thus offers incomplete protection from exposure to sulfur oxide gases and particles. In addition, because children spend more time outdoors and are more active than adults, they have greater exposure to ambient air pollutants and, probably, experience greater doses because of higher ventilation rates from heightened activity. The effects in children associated with particulate matter and sulfur oxides have been reported by many researchers.[72-77]

Approximately 24.6 million people are 65 years of age or older. In addition to immunulogical deficiencies, many elderly have reduced lung elasticity, and all elderly have lost some lung function, making them more susceptible to elevated levels of these air pollutants.[78-80] Death and illnesses in the elderly during air pollution episodes have been reported in several studies.[81-83]

Finally, because of increased particle penetration, mouthbreathers and oronasal breathers are a high-risk group. Current estimates indicate that this group includes about 15 percent of the population.[84,85]

CONCLUSIONS

The efforts by federal, state and local authorities to reduce pollution of the air by sulfur oxides have achieved mixed results. While concentrations of sulfur oxides near emission sources have lessened considerably, concentrations of SO_2 and its transformation products, sulfuric acid and other sulfate species, many miles away from these sources have, at best, remained the same and, in certain areas of the United States have even increased. So much attention on the long-range transport of sulfur pollution has been given to ecological effects --acid rain--that many have overlooked the effects on public health that this long-range transport poses.

The observed effects on asthmatics of SO_2 at 0.25 to 0.5 ppm and of H_2SO_4 at 100 $\mu g/m^3$ should be taken into account in making decisions regarding control strategies for SO_2. Temporary small changes in pulmonary function in healthy adults exposed to SO_2 levels of 1.0 ppm or H_2SO_4 levels of 1,000 $\mu g/m^3$ are of less concern than effects observed in asthmatics at much lower concentrations. These effects are likely to occur at SO_2 and sulfate levels in the ambient air. Their seriousness is reflected by the fact that airway obstruction and symptoms such as wheezing and dyspnea are among factors considered by physicians in determining the need to hospitalize asthma patients.

Relatively high concentrations of SO_2 and sulfuric acid have been reported in the Los Angeles basin area and in the northeastern United States. During the summer season in the Northeast, levels of sulfuric acid/sulfates range from 15 to 20 $\mu g/m^3$, while peaks of 25 $\mu g/m^3$ and higher are not uncommon. During this time, ozone levels are also elevated. Moreover, the potentiation of SO_2-induced bronchoconstriction by cold, dry air raises equal concern during the winter season, when SO_2 levels reach their highest, for example, in the Northeast.

Both the elevated sulfate and SO_2 concentrations combined with elevated ozone levels increase the health risks to those people with preexisting illnesses, those spending time out of doors, and those engaged in outside physical activity. This group includes asthmatics, people with allergies, those with chronic obstructive lung disease and cardiovascular disease, those involved in outdoor occupations, children, and the elderly. During the summer season, as noted previously, both children and the elderly are particularly sensitive to exposure to sulfate air pollution. During the winter season, these same groups are particularly sensitive to exposure to SO_2. While it is difficult to estimate the number of people affected by SO_2 and sulfuric acid aerosols, a variety of respiratory-related illnesses are likely to occur in sensitive populations during peak concentrations.

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S. 768

A STATEMENT BY
Thomas A. Kamstra, AIA

ON BEHALF OF
THE AMERICAN INSTITUTE OF ARCHITECTS

BEFORE
COMMITTEE ON ENVIRONMENT
AND PUBLIC WORKS

U.S. SENATE

November 15, 1983

29-328 O--84----12

Mr. Chairman and members of the Committee, my name is Thomas Kamstra, AIA, and I am appearing today on behalf of The American Institute of Architects, the professional organization representing this nation's architects. The Institute very much appreciates your invitation to testify today on S. 768, the Clean Air Amendments of 1983. I am currently chairman of the AIA's Regional Development and Natural Resources Committee, and am a practicing partner of the firm Kamstra, Dickerson and Associates of Reston, Virginia.

The AIA has long maintained a policy of promoting a better quality environment. We believe that responsibilities of government include efforts to reduce the pollution in our air. Control and reduction of air pollution must be a top priority of government at all levels.

The subject of today's hearing is S. 768, the Clean Air Amendments of 1983, one of several measures before the Congress designed to assure better air quality. We applaud your leadership, Mr. Chairman, in advancing S. 768, which reflects your own clear commitment to a cleaner environment, and we also commend the other members of your committee in working to achieve the same goal through alternative approaches.

Although the AIA is vitally concerned about all aspects of air pollution, we are most directly concerned with two specific areas--indoor air pollution and acid rain (or "deposition"). My testimony today concentrates in large part on these critical national problems. The Institute is currently evaluating the various proposals before the Congress to deal with acid rain and indoor air pollution, in order to determine which approaches best achieve the goal of effective improvements in the nation's air quality at the least possible cost to the public. With the committee's permission, we shall submit for the record a more detailed evaluation. At this time, however, I would like to share briefly with the Committee several important considerations that the Institute believes should be reflected in any legislation developed to deal with indoor air pollution and acid rain.

ACID RAIN

Acid rain is one of the critical air pollution problems of our time. It turns our lakes into dead seas, kills our forests, poisons our soil, damages the health of man and animals, and eats away at our buildings. Its impact on the built environment is of particular importance to the architectural profession. We know the harm it can do--to our homes, our workplaces, our monuments, and our historic and cultural structures. Let me cite several examples of how acid rain wears away our structures. Reinforced concrete, used in the construction of roads, bridges, and commercial buildings, is highly susceptible to acid rain damage. Acid salts trapped below the surface of concrete can cause tremendous pressure within the concrete, in turn causing it to blister or peel off in layers. When this happens, the acid compounds then attack the reinforcing steel used with the concrete, thus weakening the structure. Acid rain also harms copper and other metals by wearing away protective coatings found on them. We find that acid rain is most damaging to marble, limestone, and concrete and therefore has a most serious impact on statues and monuments. Acid particles and gases can also find their way into museums and other cultural repositories through conventional ventilation systems and, as a result, can attack paintings, books, textiles and other items stored inside. On a more fundamental level, acid rain damages one of the building industry's most basic materials--timber--both here and abroad. The annual growth of forests in the United States has slowed considerably in areas with high levels of acid rain. I have attached for the Committee's review a more detailed AIA analysis of the effects of acid rain on materials.

Materials damage due to both acid rain and air pollution costs billions of dollars. For example, in the United States, it is estimated that air pollution damage to materials may cost as much as $4 billion a year, while one study of twelve northwestern European countries indicates that sulfur dioxide damage there to zinc and galvanized steel alone amounts to about $20 billion a year.

To address the problems of acid rain in particular, the AIA favors a two-pronged approach--mitigation and continued research. The Institute cannot support proposals that would delay efforts to reduce the amount of acid rain, pending further research, but instead believes that both must proceed together. The cumulative impact of acid rain, which will likely cause a more rapid deterioration of structures than experienced in the last ten or twenty years, makes imperative an action program to combat such rain. However, there is much yet to learn about phenomena such as the effects of acid rain on particular materials and the dynamics involved in the transport of damaging chemical compounds from one area to the next. As a result, there is a need for continuing research to provide us with the knowledge to make the nation's response increasingly effective.

The AIA believes that the pollution reduction goal of eight million tons of sulfur dioxide over a twelve-year period is too little over too long a period. We prefer reductions of 12 million tons over ten years.

The AIA finds merit in the federal-state relationship that S. 768 would establish to deal with acid rain. Permitting states to devise their own programs to reach their reduction targets allows them to tailor their responses to their own particular economic, environmental, and political conditions. At the same time, the AIA is sensitive to the need to assure that proposed state programs submitted to the federal government are rigorously reviewed to determine that the reduction targets will actually be met. The AIA also recognizes that by placing in the hands of the states the major responsibility for attaining clean air objectives, S. 768 does not adequately address important economic consequences of acid rain mitigation strategies for states and localities highly dependent on the high sulfur coal industry.

The legislation should also carry specific findings relating to the effects of acid rain on the built environment. Such findings are necessary to place into law the federal government's acknowledgement of the importance of taking action as soon as possible to reduce the damage that acid rain causes to buildings and other man-made structures.

S. 768 calls for reductions only of sulfur dioxide. Other measures permit states to substitute nitrogen oxide reductions for sulfur dioxide on a two for one basis. S. 768 also limits the acid rain mitigation area to 31 states. The AIA approves of limiting reductions to sulfur dioxide at this time. Insufficient information exists about nitrogen oxide to be certain that a trade off, as proposed in other legislation, will actually lead to mitigation of the most damaging form of acid rain to the degree desired. Also, while the AIA recognizes that the overwhelming amount of sulfur dioxide is produced in the 31 states covered under S. 768, the remainder of the 48 contiguous states should also be required to undertake efforts to reduce the production of sulfur dioxide within their boundaries.

INDOOR AIR POLLUTION

The architectural profession has become increasingly concerned about indoor air pollution as a result of the rising incidence of worker illness in office buildings.

At the same time, attempts to identify the causes of these illnesses have revealed the complexity of the problem of indoor air pollution. Despite the apparent economic, health, and energy consequences, federal research efforts in the area of indoor air pollution have been fragmented and suffered frequent setbacks. S. 768 seeks to establish a more effective federal indoor air quality research program.

EPA would be given the authority to investigate all aspects of indoor air quality, including the:

1. Effects of indoor air pollution on human health.
2. Development and demonstration of control technologies, and
3. Dissemination of research findings.

In many respects, EPA is uniquely qualified to conduct this research program. EPA has considerable expertise in data collection, performance monitoring and data analysis. It is well qualified to identify the health related aspects of indoor air pollution. We feel EPA will be able to carry out successfully these elements of the program as the lead agency of this research program.

However, we have two concerns about the program as currently envisioned.

First, we are concerned about EPA's lack of familiarity with the techniques and processes used in the design and construction of buildings, residential as well as commercial and other nonresidential. In other federal buildings research programs this lack of familiarity has led to poorly targeted research. This, in turn, has frequently produced research results that failed to meet the information needs of building industry practitioners. In this case, if EPA develops control and mitigation technologies that are extremely expensive or incompatible with the installation of conventional heating, ventilation and air conditioning systems and other building practices, then the potential for the widespread utilization of these technologies will be diminished. Thus, we would like EPA to be instructed to identify carefully the types of buildings from which it will collect data in the implementation plan, which it must submit to Congress one year after the enactment of this Act.

Secondly, we are concerned that this program, as currently set out, does not recognize the value the building industry places on attaining both indoor air quality and building energy efficiency. While energy efficiency is not a cause of indoor air pollution, examples exist that demonstrate the unfortunate consequences of not simultaneously considering both of these objectives. Control technologies that are both energy efficient and are able to mitigate indoor air pollution must be a high priority for this research program.

While this legislation allows EPA to establish committees comprised of other federal agencies concerned with various aspects of indoor air quality, we believe coordination efforts must expressly include the Department of Energy and the National Institute of Occupational Safety and Health (PSC and other). In our opinion, DOE's abilities to deal with the energy and the design and construction aspects of indoor air quality are far superior because DOE has been working with this issue for several years. NIOSH is the only agency that has extensive experience with incidences of indoor air pollution in occupational settings. This considerable experience must be brought to bear on EPA's efforts to formulate its research program. We would like to suggest an interagency task force be established as a part of this legislation.

S. 768 also allows EPA to establish advisory groups. We would like to see the "building industry" inserted as one of the groups EPA can use in its efforts to implement this program.

While it is important that the research results be made available to the public, it is particularly important that the research results from this program be made known to the building industry, which is responsible for the materials, components and systems used in the nation's buildings. Unless EPA makes an aggressive attempt to inform building industry practitioners of its research results, the potential for widespread, practical application of its findings will be greatly diminished.

This concludes our testimony. I am happy to answer any questions the committee might have.

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THE EFFECTS OF ACID PRECIPITATION ON BUILDINGS: AN OVERVIEW

By Mary Ann Eichenberger Director, Government Affairs

INTRODUCTION

Acid rain, primarily known for its damaging effects on forests and on the aquatic life in streams and lakes, also damages buildings, monuments and other cultural treasures. Through a variety of processes, acid rain attacks common building materials and causes physical and chemical degradation. Sometimes, the acid rain-related damage is minor and can be mitigated. Other times, the damage is severe and cannot be repaired.

In the past few years, scientists have gained a better understanding of the ways that acid rain can damage building materials. However, disagreement exists over the extent of the damage caused specifically by acid rain and there is disagreement over the mitigation strategies that should be employed on buildings. It will be several years before ongoing research activities will quantify the extent of the problem and devise mitigation strategies that can protect the variety of buildings and other structures without creating a new set of side effects.

Much of the information in this overview is taken from an article in the July 1983 issue of Progressive Architecture, "When the Rain Comes," by Thomas Fisher.

EFFECTS OF ACID DEPOSITION ON BUILDINGS

Acid rain has been shown to damage commonly-used building materials. When the acid precipitation or acid deposition comes into contact with a building material, chemical, physical and biological reactions can take place which may damage the exposed material. Scientists now understand that the direct deposition and absorption of nitric oxide and sulfur oxide gases and particles can cause greater damage than acid precipitation (rain, sleet, snow). The particles and gases form sulfuric and nitric acid when combined with moisture and buildings. This makes these particles even more corrosive than acid precipitation.

Buildings and other structures in urban and industrial areas are more susceptible to damage from acid deposition than buildings located in rural areas because of the greater concentration of sulfur and nitric oxides in these areas. Both of these compounds have relatively short lives which means that local sources of pollution pose a greater threat to buildings than do distant polluters.

Some building materials are more easily damaged by acid deposition than others. The most chemically reactive materials appear to be marble and limestone. The calcium carbonate and calcerous sandstone, compounds found in marble and limestone, combine with sulfuric acid and oxygen to form calcium sulphate or gypsum, a water-soluble compound. The surface of the stone where the gypsum has formed will be washed away or eroded when it rains.

In some cases, the gypsum will form crusts on secluded portions of buildings. These crusts are thought to be more damaging than the surface erosion that they cause. Scientists now understand that these crusts hold water and acid salts in the pores of the building stone. This causes the stone to spall or peel off in layers when the salts or moisture expand. More common materials, including Portland cement, concrete, glass, ceramic tile, reinforced concrete, oil base paints and elastomeric compounds (rubber) are chemically damaged by sulfur dioxide and sulfuric acid.

The protective coatings found on many metals are susceptible to damage by nitric acid and sulfuric acid. For example, the green patina which forms on copper actually protects the underlying metal. This protective coating becomes soluble when the pH of the precipitation is 4 or less. At a pH of 5, zinc becomes corrosive and soluble. This could have far reaching impacts because zinc is used as an anodic coating for galvanized steel. Right now, a pH of 5 is common throughout northeastern North America and pH of 4 is common in certain areas of the northeastern United States, southern Ontario and Quebec (Schoole, MRDC paper).

For some building materials, the physical reaction caused by the acid deposition can be more destructive than the chemical reactions discussed above. Acid precipitation can leave a layer of soluble acid salts on or just below the surface of materials like stone or concrete. The surface salts, called efflorescence, are less damaging because they can be easily washed away from the surface of a building either by natural or mechanical means. The subfloresence or salts below the surface frequently combine with moisture in the pores or veins of the stone or concrete. This creates tremendous pressure within the material, which can lead to spalling or blistering. Reinforced concrete is damaged in the same manner. The damage can be compounded because the acid can corrode the reinforcing steel used in the concrete.

Acid-converting algae, bacteria and lichen can biologically damage building materials. One type of bacterium converts atmospheric acid into sulfuric or nitric acid. This combines with the calcium sulfate in the stone and subsequently turns it into gypsum. The most well known examples of this type of damage are the Parthenon and the Temple at Karnak.

Algae and lichen, which have a symbiotic relationship, also attack building materials. Acid-converting algae primarily discolor buildings and provide a support system for lichen. The microscopic roots of the lichen penetrate cracks in the stone and release oxalic acid. This converts the calcium carbonate into calcium oxalate. These crusts also cause spalling and peeling, similar to the gypsum crusts.

FEDERAL GOVERNMENT ACID PRECIPITATION RESEARCH ACTIVITIES

Federal government research activities on acid precipitation are coordinated through an Interagency Task Force on Acid Precipitation. Its membership consists of the Environmental Protection Agency (EPA), the Department of Agriculture (USDA), the Council on Environmental Quality (CEQ), the National Science Foundation (NSF), the White House Office of Science and Technology, the Departments of State, Interior, Commerce, Health and Human Services and Energy. This Task Force manages the National Acid Precipitation Assessment Program, a ten year program for managing research and policy activities on acid precipitation.

The Task Force is a complex interagency effort supported by 10 task groups. Task group jurisdiction is based on the system that the Interagency Task Force uses to classify the acid precipitation problem. The task groups are: Natural Sources, Man-Made Sources, Atmospheric Processes, Deposition Monitoring, Aquatic Impacts, Effects of Materials and Cultural Resources, Control Technologies, Assessment, Policy, and International Activities.

BUILDING RELATED RESEARCH

The Materials and Cultural Resources Task Group, formed in 1980, is responsible for the research on acid deposition on buildings. The task group is trying to find answers to the following questions:

1a. What portion of the damage to building materials can be ascribed strictly to acid deposition, separate from other types of air pollution?
 b. What are the synergistic effects of acid deposition and air pollution?
2. What materials are susceptible to which specific air pollutants?
3. Where are the susceptible materials located?
4. How extensive is the damage and what is its cost?

The research activities of the Materials Task Group are carried out by several federal agencies. These are:

Department of Energy. Through Argonne National Laboratory, advanced laboratory methods are being adapted to assess the deterioration of masonry and metals in a laboratory setting. Brookhaven National Laboratory is developing a methodology that will estimate the economic consequences of acid deposition on buildings.

Department of the Interior (DOI). The National Park Service within DOI is responsible for developing cost-effective maintenance, protection and preservation strategies for public buildings, monuments and other cultural properties and disseminating this information to the private sector.

United States Geological Survey (USGS). USGS is responsible for the assessment of the deterioration of natural building materials exposed to acid precipitation and air borne particles.

Environmental Protection Agency (EPA). EPA is responsible for developing quantitative estimates of materials damage.

General Services Administration (GSA). GSA is responsible for developing reliable indicators of the effects of acid deposition on materials.

National Bureau of Standards (NBS). NBS is responsible for developing deterioration rates for exposed materials, estimating the life cycle costs of acid deposition damage to common construction materials, and evaluating the effectiveness of protective measures.

The research activities described above are oriented toward providing policymakers with more refined data on the extent of acid deposition damage to common construction materials, and the replacement costs of these materials. As part of the Materials Task Group's long-term objective, research on mitigation and protection strategies will be conducted. In the short run, this effort will focus almost exclusively on the preservation of cultural resources.

Research on buildings is at a very elementary stage and is turning out to be more difficult than originally anticipated. For example, assessing and documenting the extent and the cost of the damage caused by acid deposition is complicated by many factors. First, it is difficult to sort out the damage caused by acid deposition as opposed to the damage caused by air pollution and natural weathering. Right now, it is almost impossible to conduct field tests on the interrelationship of the factors because the laboratory procedures are still inadequate to make the differentiation. Second, it has been hard for scientists to develop a damage function or a quantitative cause-and-effect link between acid deposition and materials damage. This prevents researchers from stating with certainty the extent of the damage or the cost of the damage. Third, researchers also lack an adequate inventory of building materials studied over a long period of time for exposure data.

In FY 83, the Materials Task Group received $995,000, 4.5 percent of the Task Force's total budget. This represents an increase of about 50 percent over the FY 82 funding level. The FY 84 budget is expected to be $1,250,000.

THE CLEAN AIR ACT: 1983 MOBILE SOURCE AMENDMENTS

STATEMENT OF
MOTOR VEHICLE MANUFACTURERS ASSOCIATION OF THE U.S., INC.
PRESENTED BY
V. J. ADDUCI
PRESIDENT AND CHIEF EXECUTIVE OFFICER
ACCOMPANIED BY
DR. FRED W. BOWDITCH
VICE PRESIDENT FOR TECHNICAL AFFAIRS
TO THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE

NOVEMBER 15, 1983

Mr. Chairman, Members of the Committee:

My name is V. J. Adduci and I am president of the Motor Vehicle Manufacturers Association of the United States, Inc. (MVMA)*. I am accompanied today by Dr. Fred W. Bowditch, MVMA Vice President for Technical Affairs.

MVMA appreciates the opportunity to present its views on amendments to the Clean Air Act and on certain proposals contained in last year's Committee bill, reintroduced this session as S.768.

Our testimony today will concentrate, of course, on Title II, the mobile source provisions of the Act, and on some of the changes to the Title II provisions contained in the Committee bill since they are the ones with which we are most specifically involved.

FEDERAL NEW PASSENGER CAR EXHAUST EMISSION STANDARDS AND REDUCTION PROGRESS

It is now 15 years since Federal motor vehicle emission control requirements began in 1968. During those years dramatic progress has been made in reducing motor vehicle emissions and improving air quality.

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*MVMA represents U.S. automobile, truck, and bus manufacturers producing more than 99 percent of all domestic motor vehicles. MVMA members include: American Motors Corporation; Chrysler Corporation; Ford Motor Company; General Motors Corporation; International Harvester Company; M.A.N. Truck & Bus Corporation; PACCAR Inc; Volkswagen of America, Inc., and Volvo North America Corporation.

In fact, the major job of new car emission control has been achieved.

Standards effective with 1980 models (.41 HC/ 7.0 CO/ 2.0 NOx) reflected a reduction of 96 percent for hydrocarbons (HC), 92 percent for carbon monoxide (CO) and 51 percent for nitrogen oxides (NOx) compared to emissions from uncontrolled cars, according to our baseline data.

Standards applicable to 1981-84 unwaivered models (.41 HC/ 3.4 CO/ 1.0 NOx) reflect a reduction of 96 percent for HC, 96 percent for CO and 76 percent for NOx.

This progress has not come easily or cheaply, however. For example, since 1968 the U.S. Bureau of Labor Statistics has compiled data each year on the cost of Federal emission control requirements on certain new car models. If added together for the years 1968-83, this amounts to more than $1100 (1983 dollars) -- with more than half of that cost occurring since 1981 even though the greatest emissions reductions already have been achieved prior to 1981.

These data underscore the fact that as the last ounce of emission control is reached, the costs rise sharply and additional air quality benefits shrink.

Consequently today in these, the last stages of vehicle emission control the question is not what final level of control is technologically possible, but whether that level is really cost-effective.

TABLE I

FEDERAL (49 STATE) PASSENGER CAR HYDROCARBON, CARBON MONOXIDE, NITROGEN OXIDES EXHAUST EMISSION STANDARDS

(As of Clean Air Act Amendments of 1977)

MODEL YEAR	HYDROCARBONS (HC)	CARBON MONOXIDE (CO)	NITROGEN OXIDES (NOx)
1970-71	4.1 g/mi	34.0 g/mi	NR
1972	3.0	28.0	NR
1973-74	3.0	28.0	3.1 g/mi
1975-76	1.5	15.0	3.1
1977-79	1.5	15.0	2.0
1980	.41	7.0	2.0
1981	.41	3.4/7.0(a)	1.0/1.5(b)
1982*	.41	3.4/7.0(a)	1.0/1.5(b)
1983-84	.41	3.4	1.0/1.5(b)
1985	.41	3.4	1.0

Note All standards reflect current Federal test procedure values

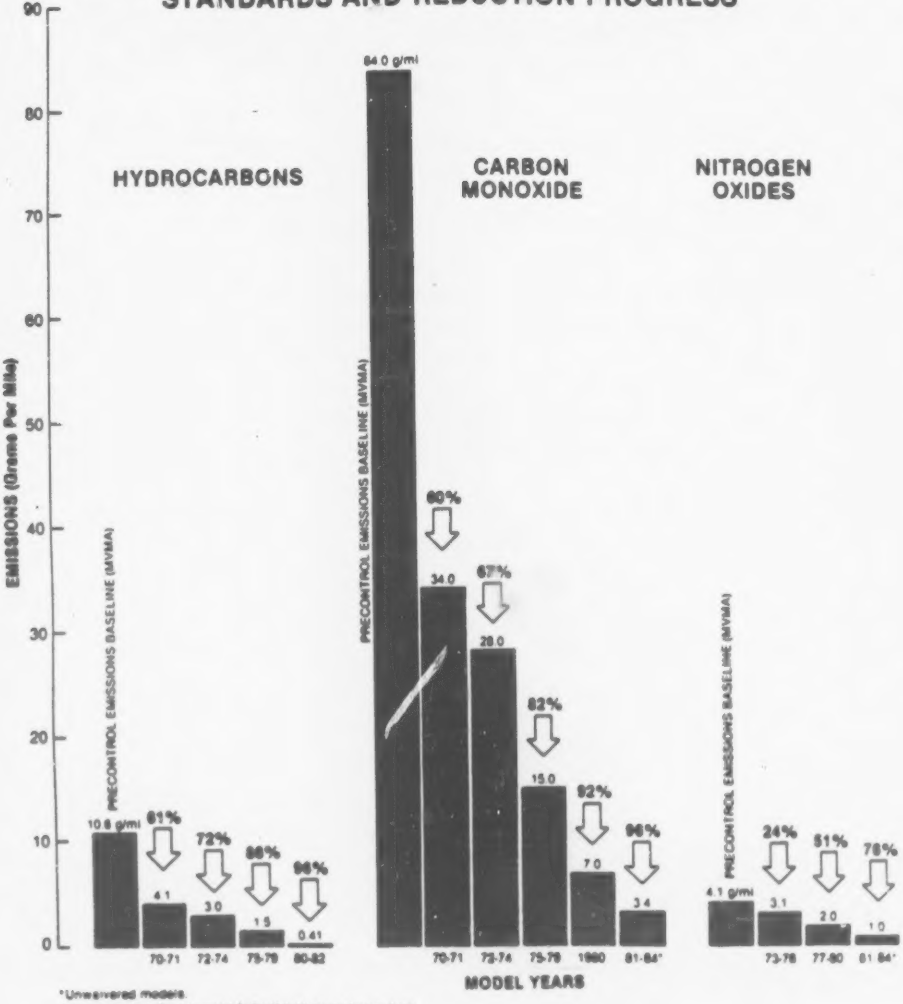
ppm — Parts Per Million
g/mi — Grams Per Mile
NR — Not Regulated

(a) 2 year waiver to 7.0 available on selected engine families

(b) 4 year waiver to 1.5 for innovative technology or diesel
2 year waiver to 2.0 for small manufacturers (1981-82)

TABLE II

FEDERAL NEW PASSENGER CAR EXHAUST EMISSION STANDARDS AND REDUCTION PROGRESS



*Unwaivered models.
All standards reflect current federal test procedure values.

TABLE III

AVERAGE RETAIL PRICE INCREASE OF NEW CAR
QUALITY IMPROVEMENTS AS COMPUTED FOR THE
NEW CAR CONSUMER PRICE INDEX

	Initial Value (Dollars)				Current Value (1983 Dollars)			
	Federal Requirements				Federal Requirements			
Model Year	Safety	Emissions	Other	Total	Safety	Emissions	Other	Total
1968	$29.65	$16.00	$-0.70	$44.95	$58.11	$31.36	$-1.37	$88.10
1969	14.00	0	-13.00	1.00	27.02	0	-25.09	1.93
1970	7.50	5.50	33.00	46.00	14.03	10.29	61.73	86.05
1971	0	19.00	-25.00	-6.00	0	34.01	-44.75	-10.74
1972	2.00	6.00	12.00	20.00	3.62	10.86	21.72	36.20
1973	85.60	27.70	10.50	123.80	154.94	50.14	19.00	224.08
1974	107.60	1.40	8.90	117.90	184.00	2.39	15.21	201.60
1975	10.70	119.20	0	129.90	16.91	188.34	0	205.25
1976	-4.60	7.60	-5.40	-2.40	-6.81	11.25	-7.99	-3.55
1977	6.95	14.30	37.90	59.15	9.80	20.16	53.43	83.39
1978	0	9.99	40.13	50.12	0	13.09	52.58	65.67
1979	5.75	12.10	28.50	46.35	6.96	14.64	34.48	56.08
1980	13.29	118.04	110.18	241.51	14.88	132.20	123.39	270.47
1981	4.29	466.65*	59.91	530.85	4.55	494.64	63.50	562.69
1982	0	84.68*	41.64	126.32	0	86.37	42.47	128.84
1983	0	64.65*	63.39	128.04	0	64.65	63.39	128.04
	283.73	972.81	401.95	1,657.49	488.01	1,164.39	471.70	2,124.10

* include changes to improve fuel economy and emissions control

SOURCE: Computed by the Motor Vehicle Manufacturers Association of the U.S., Inc. from U.S. Bureau of Labor Statistics data.

NOTE: Because of limitations in BLS methodology, annual figures may not be strictly additive year to year (e.g., due to changes in models selected). Furthermore, annual figures do not necessarily reflect whether manufacturers fully recover the cost of Federal requirements in a particular year. In addition, figures do not include data for import sources nor the cost of California emissions requirements. (Cf., GM estimates the cost of new emissions requirements beginning in 1981 at an average of $480 per car. Ford estimates the cumulative cost of all emissions control in 1981 at about $500; Chrysler at about $622, and GM at about $725.

MVMA believes that limited adjustments to Title II of the Act can and should be made in order to eliminate unnecessarily stringent and burdensome regulations which result in significant cost to the public and have little or no air quality benefit.

We have, as the Committee is aware, presented our views on this subject in the last Congress. Unfortunately, no final action was taken by the 97th Congress, and an important opportunity to reduce regulatory burdens was lost, at least temporarily.

Our testimony today will outline six key areas where we believe legislative action is needed. These will be discussed in the order they occur in the Act first as they relate to light-duty and then to heavy-duty vehicles.

AUTOMOBILE CARBON MONOXIDE EMISSION STANDARD

Section 202(b)(1)(A) of the Clean Air Act requires that the CO emissions from all 1983 and later model year passenger vehicles not exceed a level representing a 90 percent reduction from the average emissions of 1970 model year vehicles. The EPA translated this reduction into a 3.4 gpm standard.

Current EPA projections overpredict CO emissions when compared with trends measured at numerous air monitoring stations recording the highest CO levels in the country. However, even these EPA projections show that essentially all areas of the country will achieve the CO National Ambient Air Quality Standard (NAAQS) by 1987 with a 7.0 gpm standard (only a few of these areas are projected by EPA to require Inspection and Maintenance (I/M) programs to achieve this level). On this basis, the current 3.4 gpm CO emission standard goes beyond the control necessary to protect health.

The National Commission on Air Quality (NCAQ), supported by earlier studies by the National Academy of Sciences (NAS) and the California Air Resources Board, recommended that the passenger car standard be set at 7.0 gpm as soon as practicable, to be effective through the 1986 model year. The NCAQ recommended further that EPA should be given authority to continue 7.0 gpm beyond that date if protection of public health can be continued expeditiously with that standard. California, which has the authority to set its own standards, has already established a 7.0 gpm emission standard.

The Clean Air Act should be amended to establish a CO standard of 7.0 gpm for passenger vehicles.

OXIDES OF NITROGEN STANDARD FOR LIGHT-DUTY DIESEL-POWERED VEHICLES

Section 202(b)(1)(B) of the Clean Air Act provides for a 1.0 gpm NOx standard for all vehicles beginning in the 1981 model year. The Act also provides EPA with the authority to waive the NOx standard up to 1.5 gpm for diesel-powered passenger cars for the 1981-84 model years.

A Federal (49 state) 1.5 gpm NOx standard for light-duty diesel-powered vehicles is more than adequate to meet the air quality needs. Such a standard would avoid increases in particulate emissions as well as avoid the driveability and durability problems which would occur with a 1.0 gpm NOx standard.

The most effective method of NOx control is exhaust gas recirculation (EGR). However, the use of EGR on diesel engines significantly increases particulate emissions. The level of EGR required to meet a 1.0 gpm NOx standard would cause particulate emissions to rise well above their current values. Larger displacement diesel engines would be eliminated because of their inability to be controlled in a practical manner to a 1.0 gpm NOx level. Additionally, increased EGR control may cause significant durability and driveability problems in many cases.

Ambient nitrogen dioxide (NO2) concentrations (to which automotive diesel NOx emissions contribute less than 1 percent) meet the National Ambient Air Quality Standard with a few exceptions in California. The ambient NO2 level should continue to decline as more gasoline-fueled cars, built to meet the 1.0 gpm NOx standard, replace the older, higher emitting cars.

S.768 would establish a 1.0 gpm NOx standard for 1985 and later model year passenger cars but would permit a waiver to 1.5 gpm during model years 1986-87 if a waiver of the particulate standard is not also sought. While a two-year waiver provision would certainly be preferable to an across-the-board 1.0 gpm standard, we believe that a permanent 1.5 gpm NOx standard for light duty diesels would adequately protect air quality while allowing for the continued production of a full line of automotive diesel engines.

HIGH ALTITUDE STANDARDS

MVMA supports the altitude provisions of the Committee bill, S.768. This would provide proportional HC and particulate standards and national CO and NOx standards at altitude. With a nationwide CO standard of 7.0 gpm as discussed previously, this would provide ample assurance of attaining air quality standards on a timely basis.

HEAVY-DUTY TRUCK STANDARDS

Section 202(a)(3) of the Clean Air Act directs the Administrator to prescribe reductions of at least 90 percent from uncontrolled levels for HC and CO emissions and 75 percent from uncontrolled levels for NOx emissions from heavy-duty vehicles or engines. Less stringent reductions may be promulgated if the EPA Administrator finds that meeting the standards cannot be achieved with available technology, without increasing cost or decreasing fuel economy to an excessive and unreasonable degree, or if the standards are not justified in terms of public health.

EPA recently issued* regulations which impose stringent HC and CO standards and other provisions for 1985 and later model year heavy trucks. S.768 would amend the Act to strip the Administrator of his authority to amend the HC and CO standards from the fixed percentage levels established in the Act. Unfortunately, we cannot support that approach. We believe it is important for the Administrator to retain the flexibility currently provided in the Act. In fact, as I will discuss in more detail later, we believe that the Clean Air Act should be amended to remove the requirements for specific fixed percentage reductions because the percentage reductions bear no relationship to air quality needs and are therefore arbitrary and capricious in heavy-duty vehicle and engine emissions. Meeting the fixed percent reduction has been shown to give little air quality benefit while severely taxing or exceeding technological feasibility at a high cost to the customer. Added administrative flexibility is needed to avoid this result.

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* Signed October 25, 1983.

Therefore determination of the appropriate standards should be delegated to the Administrator with the requirement that they be set only after public hearing and that they be based on the need for such standards to meet the National Ambient Air Quality Standards (NAAQS), with due consideration given to costs (including fuel economy and maintenance) and technological feasibility.

LIGHT AND HEAVY-DUTY TRUCK USEFUL LIFE

Section 202(d) of the Clean Air Act should be amended to explicitly reaffirm that the "half-life" concept be applied in determining useful life for all classes of motor vehicles.

EPA has arbitrarily and without justification promulgated light and heavy-duty truck regulations which redefine the term "useful life" for all light and heavy trucks to mean the total life of the engine. With respect to light duty trucks, for example, this means an increase in the "useful life" from the present 5 years/50,000 miles to 11 years/120,000 miles. In the case of the heaviest diesel trucks, EPA's rules increase the "useful life" period to 8 years/290,000 miles.

In the case of passenger cars, Congress had earlier interpreted "useful life" to mean one-half the total life. This "half-life" concept for light and heavy-duty trucks has been endorsed by both House and Senate committees in their separate versions of proposed 1982 Clean Air Act Amendments.

By changing the concept of half-life to total life, EPA has disregarded Congressional direction and further increased the stringency of the emission standards.

RECALL ALTERNATIVES

Section 207(c)(1) of the Clean Air Act provides in part that if EPA determines that a particular class or category of vehicles fail to conform with the emissions standards, then EPA must notify the manufacturer and require the submission of a plan to remedy the nonconformity.

It is in the public interest that any remedial action best serve the Act's fundamental objective -- to improve air quality -- and be done in the most cost-effective manner. This means that there should be a certainty that the vehicles in question are, in fact, failing to meet applicable standards and that cost effective alternatives to recalling a particular class of vehicle, which will also benefit air quality, be considered.

The Clean Air Act should be amended to reaffirm and make explicit EPA's authority to exercise flexibility under the recall section to approve the manufacturer's remedial plan which makes the most sense from an air quality standpoint, including approval of plans requiring actions by the manufacturer other than recall of the nonconforming vehicle class.

THE COMMITTEE BILL (S.3041/S.768)

Some of the MVMA's concerns, such as "useful life," have been addressed in the Committee bill. Others have not. As I indicated earlier, we are especially concerned with the Committee bill's treatment of the light and heavy-duty truck standards. I would like at this time to discuss our concerns in detail. S.768 would for the first time write into the Clean Air Act specific diesel particulate standards for cars and light trucks and HC, CO and NOx standards for light trucks. By so doing, the Congress would take on the complex task of making technical judgments about the appropriate levels of control without the benefit of the regulator process that was created to perform such highly technical functions.

Whenever Congress writes standards into the law it is seldom if ever a one time activity -- as the history of the Clean Air Act so clearly demonstrates.

LIGHT TRUCK EMISSION STANDARDS

This provision of the Committee's bill is primarily directed at the future NOx standards since the HC and CO standards were identical to ones already set by EPA to begin with the 1984 model year.

The present light truck NOx standard is 2.3 gpm. EPA is expected to propose a more stringent standard early next year. The Committee bill, effective for model year 1985 and after, would set the standard at 1.2 gpm for light trucks 6,000 lbs. GVW and under and at 1.7 gpm for those over 6,000 lbs. GVW. Diesel light trucks for 1985-86 could seek a waiver to meet less stringent standards.

Manufacturers have reviewed this proposal and made the following analysis:

1. Light-Duty Diesel Trucks

The proposed light-duty NOx standards are beyond the capability of current technology for diesel-powered light-duty trucks when coupled with EPA's stringent particulate standard. Even at today's 2.3 gpm NOx standard, a few light truck models (only the smallest ones) will be able to achieve the 0.26 gpm particulate emission standard currently required for 1985 (EPA is currently evaluating a delay to 1987 model year) without particulate trap technology. This control technology, is not now feasible and if ever available, will significantly increase truck costs, increase fuel consumption and degrade engine power.

2. Light-Duty Gasoline Trucks

The proposed NOx requirements would require the application of costly emission control systems. Electronic controls and three-way catalysts will be required on all gasoline engines to control NOx emissions to the levels required in the bill -- levels much more stringent than necessary to achieve air quality standards. Further, the proposed 1985 model year implementation of the NOx standards does not afford sufficient lead time to conduct an orderly product development program. Thus, the lack of immediately available control equipment, as well as equipment cost, would place small volume truck manufacturers who purchase emission control technology from other manufacturers at a competitive disadvantage.

Furthermore, under the Clean Act Act, NOx emissions are controlled primarily to meet the National Ambient Air Quality Standard (NAAQS) for NO2. Cars and trucks account for only about one-third of total NOx emissions nationwide (light trucks only 4 percent), according to latest published EPA estimates. Moreover, highway vehicle and total NOx emissions have declined each year since 1978. Currently, the NAAQS for NO2 is not being exceeded in any part of the U.S. where Federal motor vehicle NOx emission standards apply.* In California, the only state that sets its own

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* On August 8, 1983 EPA reclassified Denver from nonattainment to attainment for NO2 and on October 11, 1983 EPA proposed to reclassify Chicago from nonattainment to attainment for NO2.

TABLE IV

NATIONWIDE NITROGEN OXIDE EMISSIONS
1978 and 1981
TERAGRAMS

SOURCE CATEGORY	NOx		
	1978	1981	Change
Transportation			
Highway Vehicles	7.1	6.6	-.5
Other	2.1	1.9	-.2
Total	9.2	8.5	-.7
Stationary Fuel Combustion			
Electric Utilities	5.9	6.6	+.7
Industrial	3.7	2.9	-.8
Residential-Commercial	0.7	0.6	-.1
Total	10.3	10.1	-.2
Industrial Processes	0.7	0.6	-.1
Other	0.6	0.6	-
Total	20.5	19.5	-1.0

SOURCE: EPA, "National Air Pollutant Emission Estimates, 1970-81," September, 1982.

NOTE: One teragram equals 10^{12} grams (10^6 metric tons) .
a value of zero indicates less than 50,000 metric tons.

motor vehicle emission standards, only four counties are continuing to experience exceedances for NO2.

TRUCK NOx EMISSIONS AND ACID DEPOSITION

The light truck NOx standards proposed in the Committee bill have also been urged by some in connection with acid rain proposals.

We believe that the idea that such standards would have a meaningful impact on alleviating acid deposition fails to take into account two main points:

1. NOx is not the primary pollutant responsible for the formation of acid deposition. Rain acidity in the Northeastern part of the country is about 70 percent sulfuric acid and 30 percent nitric acid. NOx, unlike sulfur dioxide (SO2), can form compounds that are used by the ecosystem, which is normally nitrogen deficient. This statement is supported by essentially every major scientific review of this subject, which includes the recent report by the Office of Science and Technology Policy Peer Review Panel; the National Academy of Sciences Report on Acid Rain; the U.S.-Canadian Memorandum of Intent Acid Rain Working Group; and the EPA Critical Assessment Documents on Acid Rain.

2. NOx emissions from trucks are a negligible part of any acid deposition problem. Based on the National Emissions Data System Inventory, current NOx emissions from all light and heavy trucks contribute less than 5 percent of the total precursor pollutants responsible for acid deposition. The proposed more stringent

control of light truck NOx emissions would result in a minimal benefit (estimated at less than 1 percent improvement compared to current NOx levels) to the localized acid precipitation program.

DIESEL PARTICULATE STANDARDS

The Committee bill would set by law final diesel particulate standards of .2 gpm for cars and .26 gpm for light trucks beginning 1986. These provisions would require particulate traps to be installed in all but the smallest vehicles. Since no durable system has been proved which will meet these requirements, no firm cost estimates are available.

Furthermore, a 1982 NAS study recommended that less stringent standards for cars and light trucks be considered.*

Earlier projections of a substantial rapid expansion of light-duty diesel sales have not materialized, particularly since gasoline prices have stabilized. For the first six months of 1983, diesel car sales were 2.4 percent of the market compared to a high of 6.1 percent in 1981. In 1983 diesels accounted for about 7 percent of light truck sales.

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*Diesel Cars: Benefits, Risks and Public Policy, National Academy Press, 1982, p. XVIII.

TABLE V

U.S. DIESEL CAR SALES

Calendar 1977-1983

	1977	1978	1979	1980	1981	1982	1983*
Oldsmobile	2,304	57,025	111,240	126,853	115,858	75,482	19,997
Cadillac	-	3,825	29,616	38,754	40,241	16,939	2,590
Chevrolet	-	-	1,650	12,450	31,582	63,898	12,012
Pontiac	-	-	2,275	13,475	34,117	19,419	3,115
Buick	-	-	2,750	19,790	48,627	30,417	7,272
Total GM	2,304	60,850	147,531	211,322	310,426	206,155	44,986
VW	11,302	41,296	85,692	113,943	118,674	51,756	15,153
Mercedes Benz	22,434	24,631	35,635	39,263	49,362	52,054	27,571
Peugeot	5,149	5,547	8,649	10,337	14,351	11,139	2,776
Audi	-	-	2,200	8,036	6,436	7,313	4,844
Volvo	-	-	-	4,147	1,998	7,461	4,024
Isuzu	-	-	-	-	10,368	11,477	4,879
Datsun	-	-	-	-	9,173	8,836	3,695
Total	41,189	135,324	279,707	351,048	520,788	356,191	107,908
% Total Market	.004	1.2	2.6	4.3	6.1	4.5	2.4

* January-June

SOURCE: Ward's Engineering Update
Ward's Automotive Reports

CONCLUSION

Mr. Chairman, it is now some six years since Congress last made adjustments to the Clean Air Act despite the fact that over the past three years considerable efforts have been made by this Committee and others to complete the reauthorization process.

We believe that the minor adjustments we are recommending will reduce regulatory complexity and costs without jeopardizing air quality progress.

We would welcome the opportunity to assist the Committee to the best of our ability with any additional information that may be needed whenever a markup is scheduled on the Clean Air Act reauthorization legislation.

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JAMES H. BOYD
DIRECTOR OF GOVERNMENT RELATIONS

202 842 3383

December 1, 1983

The Honorable Robert T. Stafford
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

RE: S. 768: Clean Air Act
Amendments - Section 107
(Nonferrous Smelters)

Dear Mr. Chairman:

At the hearings of the Committee on S. 768 held on November 15, 1983, a number of witnesses discussed the provisions of Section 107 of the bill that relate to extension of the "nonferrous smelter order" program under Section 119 of the Clean Air Act. We add these comments concerning that section on behalf of Magma Copper Company, a wholly-owned subsidiary of Newmont Mining Corporation, which has for many years operated a copper mine, smelter and refinery at San Manuel, Arizona.

Section 119, as you know, was enacted in 1977 "to protect the economic viability of nonferrous smelters" and in "recognition of the technological problems associated with retrofitting existing nonferrous smelters." S. Rep. No.95-127, 95th Cong., 1st Sess., 24, 25 (1977). In the case of certain smelters, that section postponed for up to ten years (i.e., to the end of 1987) the requirement of meeting national ambient air quality standards using constant control technology. In the interim, Sec. 119 permits ambient standards to be met by these smelters through dispersion techniques, such as "supplemental control systems" (SCS), and requires the smelters to conduct further research into new, more cost-effective methods of constant emissions control than have thus far been available.

Magma believes that a five-year extension of this smelter program under Sec. 119 is necessary and appropriate because the economic and technological problems that led to this statutory provision remain fully as grave today as in 1977. Congress clearly intended that Sec. 119 be extended under such circumstances. The legislative history of the 1977 Amendments plainly states that "further extension . . . beyond January 1, 1988, in the case of smelter orders. . . should be granted. . . only if, after review of the act . . . , Congress determines that further extensions are warranted and necessary," but that "[i]f such further extensions are warranted under the conditions at that time, Congress . . . can and will authorize them to be granted." H.R. Rep. No. 95-294, 95th Congress, 1st Sess. 65 (1977).

In support of a five-year extension, we bring to the Committee's attention the following two points:

1. Copper prices remain badly depressed. The average U.S. producer price of copper in 1977 was 66¢ per pound (according to the American Bureau of Metals Statistics, publisher of *Metals Week*). Due to severe pressures from foreign competition, the price of copper is now only 67¢ per pound (*Wall Street Journal*, Nov. 18, 1983, at 44) almost exactly where it was in 1977. Yet, the GNP inflation index has risen 48% since 1977 (Council of Economic Advisors, *Economic Indicators*, Oct. 1983 at 2). Thus, in terms of real dollar value, the copper price is substantially lower than it was in 1977, while the operating costs of smelters have risen dramatically. We know of no forecasters who predict a significant rise in copper prices in the near future.

Moreover, we estimate the cost of retrofitting the Magma smelter to meet its emission limitation at more than $200 million. Magma suffered net losses of $15 million in 1981, and $30 million in 1982; and it anticipates substantial losses for 1983 as well. In these circumstances, we are confident that the Environmental Protection Agency will find that Magma is entitled to the full extension now permitted by Sec. 119 - to January 1, 1988. On the other hand, Magma is hardly likely to be able to afford the required investment in new controls in 1985, when it would have to commence construction in order to achieve compliance by the existing statutory deadline of January 1988. We therefore urge the Committee to recognize, by reporting out Sec. 107, that an extension of the smelter program under Sec. 119 is mandated by current economic conditions.

2. Magma is meeting the ambient standards. During the existing smelter program, Magma ensures maintenance of the ambient standards for sulfur dioxide through effective use of SCS and an acid plant for converter gases. Magma has had only one smelter violation in the past 15 months. That violation has been traced, not to the use of SCS, but rather to a malfunction in the smelter's constant control gas treating equipment, which Magma has since repaired at a cost of over $4 million. Thus, Magma takes seriously its obligation to meet the ambient standards, and recognizes that any extension of the smelter program under Sec. 119 will properly be conditioned upon meeting those standards at all times.

In sum, the plight of the domestic nonferrous industry is desparate, and we urge retention of the provisions in Sec. 107 of S. 768 that would amend Sec. 119(c)(2) to authorize extension of the existing smelter program to January 1, 1993.

Respectfully,

J H Boyd

James H. Boyd
Director of Government Relations
Newmont Mining Corporation

II

98TH CONGRESS
1ST SESSION

S. 768

To amend the Clean Air Act.

IN THE SENATE OF THE UNITED STATES

MARCH 10 (legislative day, MARCH 7), 1983

Mr. STAFFORD (for himself, Mr. CHAFEE, Mr. MITCHELL, Mr. BENTSEN, Mr. DURENBERGER, Mr. MOYNIHAN, Mr. BAUCUS, Mr. HUMPHREY, Mr. DOMENICI, and Mr. SIMPSON) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

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A BILL

To amend the Clean Air Act.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Clean Air Act Amendments of 1983".

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TITLE I—AMENDMENTS RELATING PRIMARILY TO STATIONARY SOURCES

INDIAN TRIBES

SEC. 101. (a) Section 105(c) of the Clean Air Act is amended—

(1) by inserting in the third sentence thereof "(other than agencies designated by Indian tribes

under the provisions of section 302(b)(5)" after "agencies"; and

(2) by inserting at the end thereof the following new sentence: "No requirement like that in the previous sentence shall apply to the level of grants to be awarded to agencies designated by Indian tribes under the provisions of section 302(b)(5).".

(b) Section 302(b) of the Clean Air Act is amended—

(1) by striking out "or" at the end of paragraph (3);

(2) by striking out the period at the end thereof and inserting in lieu thereof "; or"; and

(3) by inserting at the end thereof a new paragraph as follows:

"(5) for the purposes of receiving grants under section 105, a single agency designated for such purposes within an Indian reservation by the tribal governing body of a federally recognized Indian tribe.".

INFORMATION FOR TECHNOLOGY REQUIREMENTS

SEC. 102. Section 108 of the Clean Air Act is amended by adding at the end thereof the following new subsection:

"(g) The Administrator shall publish and distribute to State agencies administering the permit programs required by section 110(a)(2)(D), and make available to other interested persons, guidance documents to assist such agencies in implementing the requirements of parts C and D regarding best available control technology and the requirements of part D regarding reasonably available control technology. Such guidance documents shall be published within one year after the date of the enactment of the Clean Air Act Amendments of 1982 and shall be updated at least every year thereafter. Such documents shall describe the determinations of best available control technology and reasonably available control technology which have been made by the Administrator (under section 110(c)) and by State air pollution control agencies. In describing such determinations, the Administrator shall distinguish among different sizes, types, and categories of sources, and shall take care to describe such determinations made with respect to major emitting facilities of the sizes, types, and classes subject to the requirements of sections 169(3)(B), and 171(3) (B) and (C) in sufficient detail to enable States to make the determinations required by those sections.".

SECONDARY AMBIENT AIR QUALITY STANDARDS

SEC. 103. Section 109(b)(2) of the Clean Air Act is amended by striking "any" before "known or anticipated adverse effects".

IMPLEMENTATION PLAN REVISIONS

SEC. 104. Section 110(a)(3) of the Clean Air Act is amended to read as follows:

"(3)(A) Except as provided in subparagraph (E) of this paragraph, any revision of an implementation plan or portion thereof shall be deemed approved under this subsection one hundred and twenty days after such revision is submitted to the Administrator, unless prior to such date the Administrator disapproves such revision for failure to comply with the requirements of paragraph (2) of this subsection.

"(B)(i) Any revision of an implementation plan or portion thereof shall not be considered to have been submitted until the State has provided reasonable notice and opportunity for public hearings. The Administrator shall promptly publish a notice of receipt of such submittal and announce a sixty-day period for public comment on such revision.

"(ii) The Administrator shall participate in the public hearings conducted by the State on any proposed revision of an implementation plan or portion thereof to the extent appropriate and may, in the discretion of the Administrator and with the consent of the State, jointly conduct such hearings with the State.

"(C) The Administrator may once extend the period within which to disapprove any revision under subparagraph (A) for a period not to exceed sixty days, if, after the close of the public comment period, the State submits additional information relating to compliance with the requirements of paragraph (2) of this subsection. The Administrator shall promptly publish notice of any such extension.

"(D) The Administrator shall promptly notify the State in writing of any disapproval under subparagraph (A) and shall publish a notice of such disapproval, specifying a reasonable period of time for the State to submit a further revision which complies with the requirements of paragraph (2) of this subsection, when further revision is required.

"(E)(i) If any person files comments with the Administrator during the public comment period required under subparagraph (B)(i) objecting to the approval of any revision of an implementation plan or portion of such revision, and, in the case of any revision submitted after the enactment of the Clean Air Act Amendments of 1982, demonstrates that such person filed comments on the same grounds with the State during State proceedings on such revision, such revision shall not be deemed approved under this subsection until the Administrator determines not to disapprove such revision based on a review of matters raised in such comments. The Administrator shall make such a determination or disapprove such revision for failure to comply with the requirements of paragraph (2) of this subsection within one hundred and twenty days of the close of such public comment period.

"(ii) A State, or a political subdivision thereof responsible for preparing or enforcing implementation plans or revisions thereof, filing comments based on paragraph (2)(E) of this section, shall not be required to make the demonstration that such State or political subdivision filed comments with the State during State proceedings.

"(F) Any revision of an implementation plan or portion thereof in compliance with subparagraph (B)(i) submitted prior to the date of enactment of the Clean Air Act Amendments of 1982 shall be deemed to have been submitted for the purposes of this paragraph as of the date of enactment of the Clean Air Act Amendments of 1982.

"(G) Neither the State, in the case of a plan (or portion thereof) approved under this subsection, nor the Administrator, in the case of a plan (or portion thereof) promulgated under subsection (c), shall be required to revise an applicable implementation plan because one or more exemptions under section 118 (relating to Federal facilities), enforcement orders under section 113(d), suspensions under section 110 (f) or (g) (relating to temporary energy or economic authority), orders under section 119 (relating to primary nonferrous smelters), or extensions of compliance in decrees entered under 113(e) (relating to iron- or steel-producing operations) have been granted, if such plan would have met the requirements of this section if no such exemptions, orders, extensions, or variances had been granted.".

NEW SOURCE PERMITS AND OPERATING PERMITS

SEC. 105. (a) Section 110(a)(2)(B) of the Clean Air Act is amended by inserting after "such limitations," the phrase "or (for implementation plans or revisions thereof other than initial implementation plans or comprehensive revisions required (i) by establishment or revision of a national ambient air quality standard or (ii) as a condition of an extension under part D) a program to establish or modify emission limitations and schedules and timetables for compliance for particular sources in accordance with paragraph (4)(D) of this subsection,".

(b) Section 110(a)(2)(D)(ii) of the Clean Air Act is amended by striking "the location of new sources to which a standard of performance will apply" and inserting in lieu thereof "new sources subject to the requirements of section 111".

(c) Section 110(a)(4) of the Clean Air Act is amended to read as follows:

"(4)(A) No major stationary source, major emitting facility, or source subject to section 111 may be constructed unless a permit has been issued for such source or facility in accordance with this subparagraph and the applicable requirements of section 111, part C, or part D. Any such permit shall be issued only after adequate public notice and opportunity for public hearing, and on the condition that such source or facility—

"(i) will not cause or contribute to levels of any air pollutant which prevent the attainment or maintenance of any national ambient air quality standard;

"(ii) will not cause or contribute to levels of any pollutant in excess of a maximum allowable increase or maximum allowable concentration, in the case of a facility subject to part C;

"(iii) complies with the requirements of section 173, in the case of a source subject to part D; and

"(iv) achieves the degree of emission limitation which is the best available control technology pursuant to section 165(a)(4) or 173(a)(2), or for a source not subject to that requirement, complies with the applicable standard of performance under section 111.

"(B) For the purpose of subparagraph (A) of this paragraph and parts C and D, the terms 'constructed' and 'construction' include the modification (as defined in section 111(a)(4)) of any existing source or facility which increases the emissions, or the potential to emit, of such source or facility by one hundred tons or more per year of any air pollutant.

"(C)(i) In the case of any major emitting facility which is in compliance with the requirement for the best available control technology under subparagraph (A)(iv) of this paragraph, for which a permit under this section is issued after the date of enactment of the Clean Air Act Amendments of 1982, the Administrator may not require, nor require any State to require, such facility to comply with an emission limitation or standard more stringent than those contained in a permit for such facility for a period of ten years after the date of issuance of such permit. This subparagraph shall not apply to an emission limitation or standard which (I) applies to an air pollutant (including fine particulate matter) not previously regulated under sections 109 and 110, or (II) is required pursuant to section 112 or 303.

"(ii) With respect to a proposed major emitting facility during the period from the date on which the application for a permit under this subsection has been deemed complete until final action on such application, the Administrator may not require, nor require any State to require, such facility to comply with any administrative or procedural requirements for the issuance of such permit or for the calculation of emissions which are adopted or modified after the date on which such application has been deemed complete.

"(D) A State may adopt a program for establishing or modifying emission limitations (other than those established for a new source by a State pursuant to section 111(c), section 112, or parts C or D) and schedules and timetables for compliance for all or any class of sources in such State, through operating permits. general source-specific regulations, or other means. Any such program shall provide—

"(i) methods for establishing, for particular sources, emission limitations that assure that ambient air quality standards are attained within the time required and maintained thereafter;

"(ii) that each emission limitation and schedule for compliance for a particular source is established after public notice and opportunity for public hearing;

"(iii) that each emission limitation requires reasonably available control technology when required under part D;

"(iv) that a copy of each newly established emission limitation or modification of an emission limitation which involves a potential net increase in emissions of one hundred tons or more per year for a particular source or a class of sources or action delaying compliance with an emission limitation for a particular source or class of sources which would reduce emissions by one hundred tons or more per year, be submitted before taking effect to the Administrator.

"(E) The Administrator shall promptly publish notice of submittal of an emission limitation or schedule of compliance under subparagraph (D)(iv) and provide a thirty-day period for public comment on such submittal. No emission limitation or schedule for compliance required to be submitted to the Administrator under subparagraph (D)(iv) of this paragraph shall take effect—

"(i) if the Administrator within sixty days of receipt of such submittal objects in writing to the emission limitation or schedule for compliance as being inconsistent with the requirements of this subsection and this Act;

"(ii) if any person files comments with the Administrator during the public comment period required by the preceding sentence and demonstrates that such person filed comments on the same grounds with the State during State proceedings, until the Administrator determines not to object to the emission limitation or schedule for compliance; or

"(iii) if such emission limitation or schedule for compliance is not submitted in accordance with subparagraph (D)(iv) of this paragraph.

Whenever the Administrator objects under clause (i), the Administrator shall proceed under subsection (c)(1) of this section if required by the provisions of such subsection.

"(F) For the purposes of sections 113, 114, 120, 126, and 304 of this Act, any emission limitation or schedule or timetable for compliance established under a State program adopted under subparagraph (D) of this paragraph shall be deemed a provision or requirement of an applicable implementation plan.".

HAZARDOUS AIR POLLUTANTS

SEC. 106. (a) Section 122 of the Clean Air Act is amended by adding the following new subsection:

"(d)(1)(A) Not later than sixty days after the date of enactment of the Clean Air Act Amendments of 1982, the Administrator shall identify at least 20 substances or materials for which the Administrator intends to make a decision within two years after such date of enactment on whether to include such substances or materials on the list of hazardous air pollutants established under section 112(b)(1)(A). The Administrator shall include in such identification—

"(i) each substance or material for which the Environmental Protection Agency is projected to have completed a health assessment within two years after such date of enactment, and

"(ii) each other substance or material under evaluation by the Agency for inclusion on such list of hazardous air pollutants for which the Agency possesses positive data from one or more tests indicating carcinogenicity in humans or other mammals.

"(B) Not later than one year after the date of enactment of the Clean Air Act Amendments of 1982, the Administrator shall identify at least 20 substances or materials in addition to those identified in subparagraph (A) for which the Administrator intends to make a decision within five years after such date of enactment on whether to include such substances or materials on the list of hazardous air pollutants established under section 112(b)(1)(A).

"(C) In selecting the substances or materials to be identified under subparagraphs (A) and (B), the Administrator shall first consider the substances or materials which the Agency has been evaluating for inclusion on the list of hazardous air pollutants established under section 112(b)(1)(A) and to which reference is made on page 561 of part 3 of the hearings of the United States Senate Committee on Environment and Public Works, June 5, 9, 11, and 22, 1981.

"(2) The National Toxicology Program, through its Director, shall make such recommendations to the Administrator as may be appropriate for substances or materials which should be identified under paragraph (1) (A) or (B). In addition, the National Toxicology Program, through its Director, shall continue to make recommendations to the Administrator on substances or materials which may be appropriate for inclusion on the list of hazardous air pollutants established under section 112(b)(1)(A).

"(3) At the time substances or materials are identified under paragraph (1)(B), the Administrator shall also identify what research, study, or evaluation, if any, is necessary for each substance or material to supply information in addition to that already in the possession of the Agency to allow the Administrator to make the determination required by paragraph (4). In cooperation with the National Toxicology Program, the Administrator shall—

"(A) establish a schedule for initiating and completing such research, study, or evaluation, enforceable under section 304(a)(2);

"(B) identify the agency which will undertake such research, study, or evaluation; and

"(C) identify the source and amount of funding which will be made available for such research, study, or evaluation, if funding under section 104(b) or section 111 of Public Law 96-510 is not provided because emissions of such substance or material are not reasonably related to entities contributing to the fund established by title II of such Act.

"(4) Within two years after the date of enactment of the Clean Air Act Amendments of 1982 for any substance or material identified under paragraph (1)(A) or within five years after such date of enactment for any substance or material identified under paragraph (1)(B) (including in each case each substance or material recommended under the first sentence of paragraph (2)), based on the information available to the Administrator, the Administrator shall publish a determination that:

"(A) the substance or material is a hazardous air pollutant as defined in section 112(a)(1), or

"(B) the Administrator does not find that the substance or material is a hazardous air pollutant as defined in section 112(a)(1).

Such determination shall be made after opportunity for the submittal of information from interested parties. The Administrator shall establish a docket for each substance identified under paragraph (1) (A) or (B) in a manner comparable to that provided in section 307(d) (2), (3), (4) and (5). Such determination shall be published together with a statement of the basis for such determination and an identification of the information available to the Administrator.

"(5)(A) If the Administrator fails to make the determination required by paragraph (4) for any substance or material identified under paragraph (1) (A) or (B) within the time provided in paragraph (4), such substance or material shall, by operation of law, be included in the list of hazardous air pollutants established under section 112(b)(1)(A). Such substance or material may be removed from such list if the Administrator within one hundred and eighty days of such inclusion and upon petition by an interested party makes the determination provided in paragraph (4)(B). Each substance or material for which the Administrator makes the determination provided in paragraph (4)(A) shall, by operation of law, be included in the list of hazardous air pollutants established under section 112(b)(1)(A).

"(B) The identification of a substance or material under paragraph (1) shall not be deemed a presumption that such substance or material is a hazardous air pollutant. The inclusion of a substance or material on the list of hazardous air pollutants by operation of the first sentence of subparagraph (A) shall not be deemed a presumption that such substance or material is a hazardous air pollutant except for the purposes of section 112.

"(6) In including any substance or material on the list of hazardous air pollutants established under section 112(b)(1)(A) (including any substance or material included on such list by operation of paragraph (5)(A)), the Administrator shall specify the chemical form or forms of such substance or material which, in the judgment of the Administrator, are determined to be hazardous air pollutants as defined in section 112(a)(1).".

(b) Section 112(b)(1)(A) of the Clean Air Act is amended by striking out "for which he intends to establish an emission standard under this section" and inserting in lieu thereof "and identifies the categories of sources which emit each such pollutant in significant amounts".

(c) Section 112(b)(1)(B) of the Clean Air Act is amended by—

(1) inserting "(i)" after "(B)";

(2) striking "180 days" in the second sentence and inserting in lieu thereof "one year";

(3) striking the last sentence thereof; and

(4) adding the following new clause:

"(ii) The Administrator shall establish each emission standard at the level which requires the greatest degree of emission reduction of such pollutant achievable through the application of the best system of continuous emission reduction which the Administrator determines is available for the class or category of source (taking into account the cost of achieving such reduction and any nonair quality health or environmental impacts). The Administrator shall determine whether such emission standard is adequate to protect the public health with an adequate margin of safety and establish such emission standard at a more stringent level than required by the previous sentence if the Administrator determines such more stringent standard is necessary to protect the public health from such hazardous air pollutant with an adequate margin of safety. An emission standard established under this clause shall be at least as stringent as the most stringent emission limitation shown by an adequate operating history to have been achieved in practice by a source of the same class or category.".

(d) Section 112(b) of the Clean Air Act is amended by adding the following new paragraph at the end thereof:

"(3) The Administrator may distinguish among classes, types, sizes, and periods of remaining useful life for sources within a category of sources for purposes of establishing standards under this subsection.".

(e) Section 112(c)(1)(B) of the Clean Air Act is amended by striking all after "in violation of such standard" and inserting in lieu thereof "after such date as the Administrator shall establish for each class or category of existing source, which shall provide for compliance as expeditiously as practicable, but in no event later than two years after the effective date of such standard.".

(f) The amendments made by subsection (c) of this section shall not affect any emission standards promulgated under section 112 of the Clean Air Act prior to the enactment of the Clean Air Act Amendments of 1982.

PRIMARY NONFERROUS SMELTER ORDERS

SEC. 107. Section 119 of the Clean Air Act is amended—

(1) in subsection (a)(2) by inserting at the end thereof a new subparagraph as follows:

"(D) Notwithstanding any other provision of this section, no primary nonferrous smelter for which a State or other entity with properly delegated authority to administer relevant parts of an applicable implementation plan has issued, on or before December 31, 1981, a variance from, and enforcement order to meet, an emission limitation or standard for sulfur oxides contained in an applicable implementation plan shall be eligible for an order under this section which would be in effect after December 31, 1987, unless such enforcement order has been first extended or vacated. Nothing in this section shall be construed as creating a presumption as to whether such enforcement order should be extended or vacated.";

(2) by amending subsection (b)(2) to read as follows—

"(2) the requirement of the applicable implementation plan with respect to which the order is issued is an emission limitation or standard for sulfur oxides which, either alone or together with de minimis use of supplementary controls as provided in subsection (g), is necessary and intended to be sufficient to enable attainment and maintenance of national primary and secondary ambient air quality standards for sulfur oxides; and";

(3) in subsection (c)(1) by adding a new sentence at the end thereof to read as follows: "An order which will be in effect after January 1, 1988, shall be conditioned upon maintaining full operation of whatever continuous emission reduction technology has been installed on such smelter as of January 1, 1988.";

(4) by amending subsection (c)(2) by striking "1983" and inserting in lieu thereof "1988" and striking "1988" and inserting in lieu thereof "1993";

(5) by redesignating subsection (e) as subsection (e)(1); by striking in the first sentence thereof "under this section applies" and inserting in lieu thereof "to January 1, 1988, applies"; and by adding a new paragraph (2) as follows—

"(2) At any time during which an order applies from January 1, 1988, to January 1, 1993, the Administrator may on his own motion or on a petition showing good cause, enter upon a public hearing respecting the availability of technology, the continuing eligibility of a smelter receiving an order, or circumstances surrounding the issuance of an order. Any order under this section shall be terminated within a reasonable period of time if the Administrator determines on the record, after notice and public hearing, that the conditions upon which the order was based no longer exist. The Administrator may require in the course of any hearing, where necessary, that clearly relevant financial data be provided to the hearing examiner who may disclose it under appropriate protective order."; and

(6) by adding the following new subsection at the end thereof—

"(g)(1) Notwithstanding the provisions of section 123(a)(2), in establishing emission limitations for sulfur oxides for primary nonferrous smelters, the effect of the de minimis use of supplementary controls (up to five percent of any calendar year) may be taken into account.

"(2) Nothing in paragraph (1) shall be construed to allow any primary nonferrous smelter to maintain a level of continuous control of sulfur oxides emissions that is less than that which presently exists at such smelter.

"(3) The Administrator shall conduct a study and report to the Congress not later than five years after the date of enactment of this subsection on the adequacy, reliability, and enforceability of the use by nonferrous smelters of de minimis supplementary controls in meeting the requirements of this Act.".

NONCOMPLIANCE PENALTIES

SEC. 108. (a) Section 120(d)(2)(B) of the Clean Air Act is amended by inserting after "such requirement," the following: "or for the purpose of achieving interim reductions of emissions of the pollutant subject to such requirement by a method approved by the Administrator (or the State, as appropriate) and not inconsistent with the achievement of such requirement,".

(b) The last sentence of section 120(d)(2) of the Clean Air Act is amended by striking out "cost of construction" and inserting in lieu thereof "costs under subparagraph (B)".

OZONE PROTECTION

SEC. 109. (a) Section 152 of the Clean Air Act is amended by striking the period at the end thereof and inserting "; and" in lieu thereof, and by adding the following new paragraph:

"(3) the term 'chlorofluorocarbon' means any of the halocarbon compounds commonly known as CFC-11, CFC-12, CFC-113, CFC-114, CFC-115, and CFC-22, as well as any other simple saturated compounds of carbon, chlorine, fluorine, and optionally hydrogen containing not more than four carbon atoms.".

(b) Section 153 of the Clean Air Act is amended by—

(1) inserting after subsection (b) the following:

"(c) The Administrator shall give priority in the studies and research authorized by subsections (a) and (b) to increasing actual measurements of stratospheric ozone and to improving methods of identifying potential trends in actual ozone measurements. The Administrator shall give priority in the studies and research authorized by the remaining sections or subsections of this part to identifying, predicting, and quantifying the effects of stratosphere changes on human health, biological and crop productivity and mortality, and ecosystem (including aquatic ecosystems) alterations.";

(2) redesignating subsections (c) and (d) as (d) and (e), respectively;

(3) inserting after subsection (e) the following:

"(f) The Administrator shall undertake to contract annually with the National Academy of Sciences to—

"(1) continue the review and research efforts heretofore conducted by the Academy pursuant to subsection (e);

"(2) determine if changes in the concentration of ozone in the stratosphere have occurred or are occurring and, if so, the extent, nature, and causes of any such changes;

"(3) investigate whether there are probable or possible effects on health and welfare from any such changes; and

"(4) report all findings as well as any uncertainties associated with such findings.

"(g) The National Academy of Sciences, in consultation with the National Aeronautics and Space Administration and the Administrator of the National Oceanic and Atmospheric Administration, shall, not later than two years after the date of enactment of the Clean Air Act Amendments of 1982 and annually thereafter report to the Administrator and the Congress all findings concerning actual or potential alteration of the concentration of ozone in the stratosphere and the causes of such alteration, and the implications and uncertainties associated with such findings. Copies of such reports shall be made available to the public."; and

(4) redesignating subsections (e), (f), and (g) as (h), (i), and (j), respectively.

(c) Section 154 of the Clean Air Act is amended by adding a new subsection as follows:

"(g) The research and monitoring programs provided for in this section shall be continued and expanded, with particular emphasis given to determining whether changes in the concentration of ozone in the stratosphere have occurred or are occurring and, if so, the extent, nature, causes, and effects of any such changes and any uncertainties associated therewith.".

(d) Section 156 of the Clean Air Act is amended by inserting "(a)" after "SEC. 156." and by adding the following new subsection:

"(b) The President shall, no later than two years after the date of enactment of the Clean Air Act Amendments of

1982 and annually thereafter, report to the Congress on the status of actions undertaken to reach an international agreement or agreements pursuant to subsection (a). The reports shall include information as to the nature, extent, and implications of any threat to the concentration of ozone in the stratosphere and the appropriate regulatory action proposed or taken by such countries pursuant to such an agreement or agreements to provide protection against the depletion of ozone in the stratosphere. Copies of such reports shall be made available to the public.".

(e) Section 157 of the Clean Air Act is amended by—

(1) striking subsection (a);

(2) striking "(b)" and inserting "(a)";

(3) adding a new subsection as follows:

"(b) In proposing any regulation of chlorofluorocarbons pursuant to this section, the Administrator shall first determine chlorofluorocarbons are contributing to depletion of the stratospheric ozone which is occurring, or is likely to occur, at a rate that may reasonably be anticipated to endanger the public health or welfare, or first report that an agreement relating to chlorofluorocarbons has been entered into pursuant to section 156"; and

(4) inserting after the second sentence of subsection (a) the following: "In promulgating such regulations, the Administrator shall take into account any un-

resolved scientific questions and the availability of suitable alternative products. The Administrator shall specifically consider the health implications of chlorofluorocarbon chemical substitutes and implications of ozone depletion for the public health and welfare.".

PREVENTION OF SIGNIFICANT DETERIORATION

SEC. 110. (a) Section 160(1) of the Clean Air Act is amended—

(1) by striking out "any"; and

(2) by striking out "effect" and inserting in lieu thereof "effects".

(b) Section 163 of the Clean Air Act is amended—

(1) in subsection (a), by striking out "section 165(d)(2)(C)(iv)" and inserting in lieu thereof "section 165(d)(2)(C)(vi)";

(2) in subsection (b)(2), by inserting "(A)" after "(2)";

(3) by adding at the end of subsection (b)(2) the following new subparagraph:

"(B) In demonstrating compliance with the twenty-four hour or three-hour maximum allowable increases established by this paragraph, the owner or operator of a major emitting facility must demonstrate only that such facility will not cause such maximum allowable increases to be exceeded during more than one such period per year. Compliance with the three-hour maximum allowable increase established by this paragraph shall not be required for areas within the State of Alaska."; and

(4) by striking out subsection (b)(3) in its entirety and renumbering the subsequent paragraph accordingly.

(c) Section 164 of the Clean Air Act is amended—

(1) in subsection (a) by striking out "(c)" and inserting in lieu thereof "(d)";

(2) in subsection (a) by striking out the third and fourth sentences;

(3) by striking out subsection (b) in its entirety, inserting in lieu thereof new subsections (b) and (c) as follows and redesignating all subsequent subsections accordingly:

"(b)(1) Not later than eighteen months after the date of enactment of the Clean Air Act Amendments of 1982, each State shall submit to the Administrator an area classification plan. Such plan shall include the following—

"(A) a list of all areas in such State classified as class I, which shall include all areas within such State referred to in section 162(a) and all other areas determined by the State to warrant such classification;

"(B) a list of all areas in such State classified as class II, which shall include all areas within such State referred to in subsection (a) which are not identified as class I under subparagraph (A) and all other areas determined by the State to warrant such classification; and

"(C) identification of all areas within such State to which this part applies and which are not listed in subparagraphs (A) or (B). Such areas shall not be subject to the maximum allowable increases specified under sections 163 and 165(d)(2).

"(2) For any areas identified under subparagraph (C) of the preceding subsection, the plan shall include the following—

"(A) a comprehensive assessment of air quality;

"(B) long-term (at least twenty years) air quality goals and a procedure for periodic review of such goals;

"(C) projections of emissions growth which would be consistent with the attainment of the goals established pursuant to subparagraph (B);

"(D) a requirement that all proposed major emitting facilities which will emit or have the potential to emit five hundred tons or more per year of particulate matter or one thousand tons or more per year of any air pollutant be subject to review and be determined to be consistent with the attainment of the goals established pursuant to subparagraph (B) prior to the issuance of a permit under section 165; and

"(E) any other requirements which the State deems necessary to attain the goals established pursuant to subparagraph (B).

"(3) Any plan submitted under this subsection, or any revision of such a plan, shall be considered a revision of the applicable State implementation plan and subject to the requirements of section 110(a)(3).

"(4) Until the plan required under this subsection to be submitted by a State is either approved or deemed approved pursuant to section 110(a)(3), all areas within such State which are class II areas immediately prior to the date of enactment of the Clean Air Act Amendments of 1982 shall continue to be subject to the maximum allowable increases prescribed for class II areas.

"(c) Prior to the submittal of such plan, notice shall be afforded, and public hearings shall be conducted in at least three different locations in the State. Prior to such hearings, the proposed classification plan shall be available for inspection. Affected local officials and Federal Land Managers shall be notified and provided with the opportunity to comment."; and

(4) in subsection (d) (as redesignated above) by striking out "(e)" and inserting in lieu thereof "(f)".

(d) Section 165 of the Clean Air Act is amended—

(1) in subsection (a)(3) by striking out "area to which this part applies more than one time per year" and inserting in lieu thereof "class I or class II area, except as provided in section 163(a)";

(2) in subsection (a)(6) by inserting "and" following "facility;";

(3) in subsection (a)(7) by striking out "source; and" and inserting in lieu thereof "facility.";

(4) by striking out subsection (a)(8);

(5) in subsection (c) by inserting before the period at the end thereof the following: ", in the case of a facility which will emit or have the potential to emit five hundred tons or more per year of particulate matter or one thousand tons or more per year of any other pollutant subject to regulation under this Act, or not later than six months after such date, in the case of a facility which will emit or have the potential to emit less than five hundred tons per year of particulate matter and less than one thousand tons per year of every other pollutant subject to regulation under this Act. Within two months after the filing of such a permit application, the person filing such permit shall

be notified whether the permit application is complete, and, if not, what additional information is required to complete the application";

(6) in subsection (d)(1) by striking out "received by such State" and all that follows and inserting in lieu thereof "which—

"(A) will emit, or have the potential to emit, five hundred tons or more per year of particulate matter or one thousand tons or more per year of any other air pollutant; or

"(B) will emit, or have the potential to emit, pollutants affecting (as determined under regulations promulgated by the Administrator) air quality in any class I area,

and provide notice to the Administrator of the final action taken on such permit.";

(7) in subsection (d)(2)(B)—

(A) by inserting "to identify and" after "responsibility" the second time it appears;

(B) by inserting "within such area" after "visibility"; and

(C) by striking out all after "area" and inserting the following: "to file a notice, and supporting information, to the permitting authority in any case in which emissions from a proposed major emitting facility may cause or contribute to an adverse impact on the air quality-related values (including visibility) of such area, and to conduct monitoring of the air quality of such area and gather such other information (including information on the effects of air pollution on the air quality-related values of such areas) as is necessary to—

"(i) assist in determining baseline concentrations in such areas, and

"(ii) otherwise carry out the Federal Land Manager's responsibilities with respect to the air quality-related values of such area.";

(8) in subsections (d)(2)(C)(ii) and (d)(2)(D)(i) by inserting "within such area" after "visibility" each time it appears;

(9) by inserting after subsection (d)(2)(C)(ii) the following:

"(iii) In any case in which the Federal Land Manager files with a State a notice alleging that emissions from a proposed major emitting facility may cause or contribute to a significant impairment of visibility within an integral vista (as defined in section 169A(h)(8)) a permit may be issued for the facility only if the public hearing provided for in section 165(a)(2) includes an opportunity for the Federal Land Manager and other interested persons to appear and comment on any impact of the facility on the integral vista and if the State determines that—

"(I) the facility would not cause a significant impairment of visibility within the integral vista, or

"(II) the issuance of the permit would be in the public interest, notwithstanding any significant impairment of visibility within the integral vista.

"(iv) In any case in which the Administrator is the permitting authority under this part, the Federal Land Manager shall provide the Governor with a copy of any notice filed with the Administrator under clause (iii), and, in making a determination under subclause (iii)(II), the Administrator shall follow any recommendation of the Governor to the extent that such recommendation is consistent with other requirements of this Act.";

(10) by redesignating clauses (iii) and (iv) as clauses (v) and (vi), respectively;

(11) in subsection (d)(2)(C)(vi) (as redesignated above) by striking out "(iii)" and inserting in lieu thereof "(v)";

(12) in subsection (d)(2)(D)(i) by striking out "(iii)" and inserting in lieu thereof "(v)";

(13) in subsection (e)(2)—

(A) by striking out "Effective one year after the date of enactment of this part" and inserting in lieu thereof "If deemed necessary or appropriate by the State"; and

(B) by striking out the second sentence thereof.

(e) Section 169 of the Clean Air Act is amended—

(1) in paragraph (2)(C) by striking out "section 111(a)" and inserting in lieu thereof "section 110(a)(4)(B)";

(2) in paragraph (3)—

(A) by inserting "(A)" after "(3)";

(B) by inserting at the end thereof the following new subparagraphs:

"(B) Before determining under section 165(a)(4) the best available control technology to be achieved by a proposed major emitting facility which will emit or have the potential to emit five hundred tons or more per year of particulate matter or one thousand tons or more per year of any other pollutant subject to regulation under this Act, the permitting authority shall review the emission limitations with respect to such pollutant achieved in practice by or required under this

Act (by a permit issued before the application for the permit for the proposed facility is complete) for major emitting facilities of the same size, type, and class (as determined by the State in accordance with any applicable regulations promulgated by the Administrator), and shall identify the most stringent of such emission limitations. The permitting authority shall first consider the most stringent emission limitation identified under the preceding sentence in determining the best available control technology to be achieved by a major emitting facility referred to in the preceding sentence.

"(C) If the permitting authority requires an emission limitation for the proposed facility which is less stringent than the emission limitation identified under subparagraph (B), the permitting authority shall provide information to the public regarding such decision.

"(D) For the purposes of subparagraph (B), the permitting authority shall be required to review emission limitations, and to identify the most stringent emission limitation achieved by, or required under, a permit issued for major emitting facilities only if—

"(i) the facilities are located within the State (or, if the Administrator is the permitting authority, within the administrative region of the Environmental Protection Agency) in which the proposed facility will be located;

"(ii) the emission limitation is described in a guidance document published and distributed to the permitting authority in accordance with section 108(g); or

"(iii) the permitting authority has received actual notice of the emission limitation by a comment submitted to the permitting authority during the consideration of the permit for the proposed facility or through any other means."; and

(3) in paragraph (4)—

(A) by striking out "at the time of the first application for a permit in an area subject to this part" and inserting in lieu thereof "in any area subject to this part at the time of the first application for a permit under this part for a major emitting facility which affected or will affect such levels (or, in an area redesignated as class I after the date of enactment of the Clean Air Act Amendments of 1982, at the time of the first such application following the date of redesignation)";

(B) by inserting ", on data submitted by a Federal Land Manager," after "agency";

(C) by inserting "(or, with respect to an area redesignated as class I after the date of enactment of the Clean Air Act Amendments of 1982, prior to the date of redesignation)" after "January 6, 1975" the first place it appears; and

(D) by inserting "(or, with respect to an area redesignated as class I after the date of enactment of the Clean Air Act Amendments of 1982, after the date of redesignation)" after "January 6, 1975" the second place it appears.

FUGITIVE DUST

SEC. 111. Section 163 of the Clean Air Act is amended—

(a) in subsection (c)(1)(C) by inserting "(i)" after "matter" and by inserting after "activities" the following: ", or (ii) attributable to emissions composed of soil which is uncontaminated by pollutants resulting from industrial activity, including emissions of such uncontaminated soil from roads, wind erosion of exposed soil surfaces and soil storage piles, and other activities in which soil is either removed, stored, transported, or redistributed, and"; and

(b) in subsection (c) by adding at the end thereof the following new paragraph:

"(4) In any State in which the Administrator is the permitting authority for this part, the Administrator may, and upon petition by the Governor shall, provide notice, conduct a public hearing, and, with the concurrence of the Governor, may issue orders or promulgate rules under paragraph (1).".

VISIBILITY

SEC. 112. (a) Section 169A of the Clean Air Act is amended—

(1) in subsection (a)(1) by inserting "significant" after "existing,";

(2) in subsection (b)(2)(A) by inserting "significant" after "any" the second time it appears;

(3) by inserting after subsection (c) a new subsection (d) as follows:

"(d)(1) This section shall not be construed to require, and the Administrator may not take any action under this section to require, any existing source to procure, install, or operate any retrofit technology to prevent or remedy impairment of visibility within an integral vista unless the Administrator has provided notice to the Governor of the State in which the source is located of the proposed action and the Governor does not, within a reasonable time as specified by the Administrator, notify the Administrator that the Governor has determined that, notwithstanding any such impairment, it would not be in the public interest to take such action.

"(2) Paragraph (1) shall not affect the requirements of this section to the extent they apply to impairment of visibility within the boundaries of a mandatory class I Federal area.";

(4) by redesignating subsections (d) through (g) as subsections (e) through (h) respectively; and

(5) in subsection (h) (as redesignated above)—

(a) by striking out "and" at the end of paragraph (6);

(b) by striking out the period at the end of paragraph (7) and inserting in lieu thereof "; and"; and

(c) by inserting at the end thereof a new paragraph (8) reading—

"(8) the term 'integral vista' means any of the integral vistas included in appendix 1 of the notice by the Department of the Interior published in the Federal Register of January 15, 1981, at pages 3646 through 3657.".

(b) Section 307(d)(9) of the Clean Air Act is amended by inserting after "applies," the following: "or of any determination by a State or a Governor under section 165(d)(2)(C)(iii) or 169A(d) that an action is or is not in the public interest,".

INTERNATIONAL POLLUTION

SEC. 113. (a) The first sentence of section 171(2) of the Clean Air Act is amended by inserting before the period a comma and the following: "discounting emissions from an immediately adjacent area in a foreign country for which the Administrator has not made the determination provided under section 115(c)".

(b) It is the sense of the Congress that the President, acting through the Secretary of State in consultation with the Administrator, shall undertake negotiations with any foreign country from which emissions would cause an area in the United States to be a nonattainment area (as defined in section 171(2) of the Clean Air Act), except for the operation of subsection (a) of this section, with the purpose of having such foreign country give the United States essentially the same rights given other countries under section 115 of the Clean Air Act.

TECHNOLOGY REQUIREMENTS FOR NONATTAINMENT AREAS

SEC. 114. (a) Section 171(3) of the Clean Air Act is amended to read as follows:

"(3)(A) The term 'best available control technology' means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act emitted from or which results from any major stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable for such source through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of 'best available control technology' result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112.

"(B) Before determining under section 173 the best available control technology to be achieved by a proposed major stationary source which will emit or have the potential to emit five hundred tons or more per year of particulate matter or one thousand tons or more per year of any other pollutant subject to regulation under this Act, the permitting authority shall review the emission limitations with respect to such pollutant achieved in practice by or required under this Act by a permit issued before the application for the permit for the proposed facility is complete for major stationary sources of the same size, type, and class (as determined by the State in accordance with any applicable regulations promulgated by the Administrator), and shall identify the most stringent of such emission limitations. The permitting authority shall first consider the most stringent emission limitation identified under the preceding sentence in determining the best available control technology to be achieved by a major stationary source referred to in the preceding sentence.

"(C) For any major stationary source emitting a pollutant (or precursor of such pollutant) for which the area in which such source will be located is nonattainment, the permitting authority shall establish an emission limitation for such pollutant which is at least as stringent as the more stringent of the following:

"(i) the most stringent emission limitation shown by an adequate operating history to have been achieved in practice by a major stationary source of the same size, type, and class (as determined by the State in accordance with any applicable regulations promulgated by the Administrator) within the same Federal administrative region; or

"(ii) unless the permitting authority determines in accordance with subparagraph (A) that such emission limitation is not achievable for the proposed source, the most stringent emission limitation included in a permit issued pursuant to this Act for a major stationary source of the same size, type, and class (as determined by the State in accordance with any applicable regulations promulgated by the Administrator) within the same Federal administrative region before the application for the permit for the proposed source is complete.

"(D) If the permitting authority requires an emission limitation for the proposed source which is less stringent than the emission limitation identified under subparagraph (B) or (C)(ii), the permitting authority shall provide information to the public regarding such decision.

"(E) For the purposes of subparagraphs (B) and (C), the permitting authority shall be required to review emission limitations and to identify the most stringent emission limitation achieved by, or required under, a permit issued for major stationary sources only if—

"(i) the sources are located within the State (or, if the Administrator is the permitting authority, within the administrative region of the Environmental Protection Agency) in which the proposed source will be located;

"(ii) the emission limitation is described in a guidance document published and distributed to the permitting authority in accordance with section 108(g); or

"(iii) the permitting authority has received actual notice of the emission limitation by a comment submitted to the permitting authority during the consideration of the permit for the proposed source or through any other means.".

(b) Section 173(a)(2) of the Clean Air Act (as redesignated by this Act) is amended to read as follows:

"(2) the proposed source is subject to the best available control technology;".

NONATTAINMENT DEFINITIONS

SEC. 115. Section 171 of the Clean Air Act is amended by adding the following new paragraphs:

"(5) The term 'major stationary source' includes each discrete operation, unit or other activity which produces or may produce emissions of one hundred tons or more per year of a pollutant or a precursor of a pollutant for which the area in which such source is or will be located is a nonattainment area.

"(6) The term 'vehicle emission control inspection and maintenance program' means a program to reduce in-use emissions from motor vehicles in an urbanized area referred to in section 172(b)(12) which—

"(A)(i) requires emissions testing and necessary adjustment, repair, or maintenance of motor vehicles regularly operating in such area, and

"(ii) is at least as effective in reducing such emissions as the programs fully approved by the Administrator under the Clean Air Act Amendments of 1977, or

"(B) in the case of an area which is subject to section 172(b)(12)(B) but is not subject to section 172(b)(12)(A) and in which motor vehicles emit less than one-third of the total hydrocarbon emissions emitted by all sources in the area (according to the emissions inventory approved by the Administrator as meeting the requirements of section 172(b)(4) for the plan revision required under the Clean Air Act Amendments of 1977 to be submitted to the Administrator before July 1, 1982)—

"(i) requires emissions testing or the direct inspection of motor vehicle emissions control systems or components for each light duty motor vehicle of each model year covered by such program regularly operating in such area at least annually and necessary adjustment, repair, or replacement, and

"(ii) is sufficient, when considered together with the other measures in the implementation plan, to provide for attainment of the national primary ambient air quality standard for photochemical oxidants as expeditiously as practicable but not later than the applicable date established under section 172(a)(2).".

CONSTRUCTION IN NONATTAINMENT AREAS

SEC. 116. Section 110(a)(2)(I) of the Clean Air Act is amended to read as follows:

"(I) it provides that in any nonattainment area (as defined in section 171(2)) to which such plan should apply, no major stationary source shall be constructed or modified if the emissions from such source will cause or contribute to concentrations of any pollutant for which a national ambient air quality standard is exceeded in such area, if—

"(i) the date established for attainment of the primary national ambient air quality standard established under section 172(a) is past and such area remains nonattainment,

"(ii) the Administrator finds the State has not submitted a plan which meets the requirements of section 172(b)(3), (4), and (12) and section 173(a)(1), or

"(iii) the State or a local government with responsibility to implement a portion of the plan is not implementing each requirement of a plan adopted or promulgated in accordance with section 172,

unless the amount of emissions from such source will be offset by reductions in the emissions of such pollutant in such area in accordance with the requirements of section 173(a)(1)(A) and the amount of such emission reductions is twice as great as the amount of emissions from such source;".

NONATTAINMENT PLAN PROVISIONS

SEC. 117. (a) Section 172(a) of the Clean Air Act is amended—

(1) in subsection (a)(1) by inserting "(A)" after "(1)" and by adding the following new subparagraph: "(B) In any nonattainment area for sulfur dioxide, particulate matter, or nitrogen dioxide for which the State demonstrates to the satisfaction of the Administrator that attainment of such national primary ambient air quality standard is not possible prior to December 31, 1982, despite the implementation of an approved or promulgated implementation plan containing all reasonably available control measures, the date for attainment of such standard under this subsection shall be not later than December 31, 1985. Such extension shall be on the condition that—

"(i) the State certifies to the Administrator prior to December 31, 1982, that attainment of such standard is not possible prior to December 31, 1982, despite implementation of all reasonably available control measures, and submits to the Administrator an accompanying explanation of the reasons therefor,

"(ii) the State agrees in writing not to modify so as to make less stringent or to delay any emission limitation or other requirement affecting emissions of the approved or promulgated implementation plan; and

"(iii) the State submits prior to December 31, 1984, a revised implementation plan complying with this section and providing for attainment of such standard not later than December 31, 1985.

Failure to submit a revised implementation plan in accordance with clause (iii) or action which in the judgment of the Administrator constitutes a failure to carry out the agreement required by clause (ii) shall immediately terminate any extension under this subparagraph."; and

(2) in subsection (a)(2) by—

(A) inserting "(A)" after "(2)" and adding the following new sentence: "An extension may be made for a State under the provisions of this subparagraph, notwithstanding a failure to submit such demonstration before January 1, 1979, as required under section 129(c) of the Clean Air Act Amendments of 1977, if the State otherwise meets the requirements of this paragraph and adopts and submits to the Administrator before December 31, 1984, a revised plan which meets the requirements of section 172 (b) and (c). Such extension shall be on the condition that—

"(i) the State certifies to the Administrator prior to December 31, 1982, that attainment of such standard is not possible prior to December 31, 1982, despite implementation of all reasonably available control measures, and submits to the Administrator an accompanying explanation of the reasons therefor;

"(ii) the State agrees in writing not to modify so as to make less stringent or to delay any emission limitation or other requirement affecting emissions of the approved or promulgated implementation plan; and

"(iii) the State submits prior to December 31, 1984, a revised implementation plan complying with this section and providing for attainment of such standard not later than December 31, 1987.

Failure to submit a revised implementation plan in accordance with clause (iii) or action which in the judgment of the Administrator constitutes a failure to carry out the agreement required by clause (ii) shall immediately terminate any extension under the preceding two sentences."; and

(B) by adding the following new subparagraphs:

"(B) In the case of a nonattainment area for photochemical oxidants in which the second highest daily maximum one-hour average concentration of such pollutant for 1979 or 1980 exceeded the national primary ambient air quality standard by 100 per centum or more or a nonattainment area for carbon monoxide in which the second highest nonoverlapping eight-hour average concentration of such pollutant for 1979 or 1980 exceeded the national primary ambient air quality standard by 100 per centum or more, and for which the Administrator determines upon the request of the State that attainment of such national primary ambient air quality standard is not possible prior to December 31, 1987, despite the implementation of all reasonably available control measures including—

"(i) the adoption of reasonably available control technology satisfactory to the Administrator by every class of source in the area prior to December 31, 1987;

"(ii) the existence of a program satisfying the requirements of section 173(a)(1); and

"(iii) the operation of a vehicle emission control inspection and maintenance program as of the date of such request of the State,

such State is authorized to establish an alternative date for attainment of such national primary ambient air quality standard. Such alternative date shall provide for attainment as expeditiously as practicable, but not later than five years after the date established under subparagraph (A) of this paragraph. Within two years after the determination of the

Administrator under this subparagraph, but not later than December 31, 1986, the State shall adopt and submit to the Administrator a revised implementation plan complying with this section and providing for attainment of such standard not later than the date established under the preceding sentence.

"(C) In the case of a nonattainment area for photochemical oxidants for which the Administrator determines, upon the request of the State during 1986 or later, that attainment of such national primary ambient air quality standard is not possible prior to December 31, 1987, despite the implementation of all reasonably available control measures including—

"(i) the adoption of reasonably available control technology satisfactory to the Administrator by every class of source in the area prior to December 31, 1987;

"(ii) the existence of a program satisfying the requirements of section 173(a)(1); and

"(iii) the operation of a vehicle emission control inspection and maintenance program as of the date of such request of the State,

such State is authorized to submit a revised implementation plan establishing an alternative date for attainment of such national primary ambient air quality standard. Such alternative date shall provide for attainment as expeditiously as practicable, but not later than three years after the date established under subparagraph (A) of this paragraph.".

(b) Section 172(b) of the Clean Air Act is amended—

(1) in subsection (b)(11)—

(A) by striking out the dash following "(a)" and inserting in lieu thereof a comma;

(B) by striking out "(A)"; and

(C) by striking out all that follows "modification;"; and

(2) by adding at the end of subsection (b) the following new paragraphs:

"(12) in the case of a plan for an area which includes all or part of an urbanized area (as defined by the Director of the Bureau of the Census) with a population of two hundred thousand or more persons according to the 1980 census and for which a demonstration has been made under subsection (a)(2)—

"(A) for carbon monoxide, or

"(B) for photochemical oxidants, if the third highest daily maximum one-hour average concentration of such pollutant during the two-year period of 1979 and 1980 exceeded the national primary ambient air quality standard by 50 per centum or more, provide for operation of a vehicle emission control inspection and maintenance program as expeditiously as practicable, but in the case of an area for which such demonstration is made after the date of enactment of the Clean Air Act Amendments of 1982 not later than January 1, 1985; and

"(13) in the case of a plan for an area for which a demonstration under paragraph (a)(2) is made after the date of enactment of the Clean Air Act Amendments of 1982, include reasonably available measures to assure continuous compliance with the requirements of permits issued under this Act for major stationary sources in such area emitting a pollutant for which such area is nonattainment (or a precursor of such pollutant).".

(c) Section 172(c) of the Clean Air Act is amended to read as follows:

"(c)(1) In the case of a State plan revision required to be submitted by reason of a demonstration under section (a)(2)(A), effective on the date such plan revision is required to be submitted such plan shall contain enforceable measures to assure attainment of the applicable standard not later than December 31, 1987.

"(2) In the case of a State plan revision required to be submitted by reason of a demonstration under subsection (a)(2) (B) or (C), effective on the date such plan revision is required to be submitted such plan shall contain enforceable measures to assure attainment of the applicable standard not later than the date established under subsection (a)(2) (B) or (C).".

(d) Section 172 of the Clean Air Act is further amended by adding at the end thereof the following new subsections:

"(d) No emission limitation or schedule of compliance for a stationary source may be relaxed or delayed in any area which receives an extension of the date for attainment of a national primary ambient air quality standard provided under subsection (a)(1)(B) or (a)(2) of this section.

"(e) A plan provision establishes the allowance permitted for a pollutant for which an area is nonattainment (or a precursor of such pollutant) from new or modified major stationary sources under subsection (b)(5) if—

"(1) the State has an approved emissions inventory for such pollutant and area meeting the requirements of subsection (b)(4), and the allowable emissions of such pollutant from proposed new or modified major stationary sources in any calendar year, in combination with all other increases in emissions of such pollutant (not offset by any reductions in emissions at such source or other sources) in such nonattainment area in the same calendar year, do not exceed one per centum of the total annual emissions of such pollutant as recorded in the approved emissions inventory;

"(2) the State conducts a review prior to construction or modification and requires the best available control technology for every new or modified source which would emit, or have the potential to emit, fifty tons or more per year of such pollutant (not offset by any reductions in emissions at such source or other sources); and

"(3) the plan, taken as a whole, meets the requirements of subsection (b), including the requirement that the plan demonstrate reasonable further progress (as defined in section 171).".

PERMIT REQUIREMENTS FOR NONATTAINMENT AREAS

SEC. 118. Section 173 of the Clean Air Act is amended—

(1) by inserting "(a)" after "SEC. 173.";

(2) in subsection (a)(1)(A) by inserting "(including nonindustrial sources, inanimate natural sources, and mobile sources)" after "region";

(3) by inserting "and under other requirements of this Act" after "plan" the first time it appears; and

(4) by inserting at the end thereof the following new subsection:

"(b) Any emission reductions required as a precondition of the issuance of a permit under subsection (a)(1)(A) may include emission reductions achieved by a State or local government and paid for by the owner or operator of the proposed new or modified source. For the purpose of the preceding sentence, the permit program required by section 172(b)(6) may include an emission reduction program providing for the emission reductions necessary to comply with the requirements of subsection (a)(1)(A) and for the determination of the amount of any fees to be paid by the owners or operators of proposed new or modified sources to the State or local government for such emission reductions.".

LIMITATIONS ON CERTAIN FEDERAL ASSISTANCE

SEC. 119. Section 176 (a) and (b) of the Clean Air Act is amended to read as follows:

"SEC. 176. (a) To such extent or in such categories as the Administrator determines to be appropriate, the Administrator shall withhold any grants authorized under this Act or the approval of any project, and the Secretary of Transportation, upon the request of the Administrator, shall not approve any projects or award any grants under title 23, United States Code, other than for Interstate highway construction with funds apportioned under section 104(b)(5)(A) of such title, safety, mass transit, landscaping, noise attenuation barriers, or transportation projects related to air quality improvement or maintenance, in any nonattainment area—

"(1) where the Administrator finds that the Governor has not submitted a plan which includes each of the elements required by section 172 within the time required for submission of such plan, or

"(2) in which the State or a responsible local government is not implementing any requirement of a plan adopted or promulgated in accordance with section 172.

"(b) The Secretary of Transportation shall not approve any projects or award any grants under title 23, United States Code, other than for Interstate highway construction with funds apportioned under section 104(b)(5)(A) of such title, safety, mass transit, landscaping, noise attenuation barriers, or transportation improvement projects related to air quality improvement or maintenance, in any nonattainment area—

"(1) where the Administrator finds that the Governor has not submitted a plan meeting the requirements of section 172(b)(12) within the time required for submission of such plan, or

"(2) in which the State or a responsible local government is not implementing any requirement of a plan required by section 172(b)(12).".

INTERSTATE TRANSPORT AND ACID PRECURSOR REDUCTION

SEC. 120. Title I of the Clean Air Act is amended by adding the following new part:

"PART E—INTERSTATE TRANSPORT AND ACID PRECURSOR REDUCTION

"FINDINGS AND PURPOSES

"SEC. 180. (a) The Congress finds that:

"(1) the long-range transport of pollutants and their transformation products is an interstate and international problem;

"(2) current levels of emissions of air pollutants from existing sources as well as increased emissions from new and existing sources threaten public health and welfare and the environment in States and countries other than those in which emitted;

"(3) reduction of total regional atmospheric loading of pollutants such as sulfur oxides and nitrogen oxides will enhance protection of public health and welfare and the environment;

"(4) more effective regulation of the interstate transport of air pollutants is needed in order to protect the health and welfare of the citizens of downwind States and the economic growth opportunities of downwind States; and

"(5) in particular,

"(A) the deposition of acid compounds from the atmosphere is causing and contributing to widespread long-term ecosystem degradation;

"(B) the principal source of the acid compounds in the atmosphere, and their precursors, is the combustion of fossil fuels;

"(C) the problem of acid deposition is of national and international significance and cannot be addressed adequately without Federal intervention;

"(D) control strategies and technology for precursors to acid deposition exist now that are economically feasible; and

"(E) current and future generations of Americans will be more adversely affected by delayed action, so that efforts to remedy the problem should commence now.

"(b) The purposes of this part are to:

"(1) protect public health and welfare and the environment from any actual or potential adverse effect caused by ambient concentrations or deposition of air pollutants, including the products of atmospheric transformation of pollutants; and

"(2) preserve the rights and responsibilities of States to protect the public health and welfare and the environment of their citizens from air pollution originating in other States.

"ESTABLISHMENT OF REGION

"SEC. 181. There is hereby established a long-range transport corridor, hereafter referred to as the "acid deposition impact region," consisting of the States of Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and the District of Columbia.

"RESEARCH AND SPECIAL STUDIES

"SEC. 182. (a) The Administrator shall conduct a study of air pollution problems associated with the long-range transport of pollutants in the portions of the continental United States not included in section 181. Not later than two years after the enactment of this section, the Administrator shall report to the Congress the results of such study.

"(b)(1) The Acid Precipitation Task Force established under title VII of the Energy Security Act (Public Law 96–294) shall submit to the Committee on Environment and

Public Works of the United States Senate and the Committee on Energy and Commerce of the United States House of Representatives, two comprehensive reports, one by December 31, 1985, and one by December 31, 1987, which shall present the findings of the research conducted under section 704(b) of such Act, including recommendations, based upon existing scientific knowledge, for reducing acid deposition and its effects.

"(2) In addition to any other funds authorized to be appropriated for the Acid Precipitation Task Force for the purposes of carrying out the activities required by section 704 of title VII of the Energy Security Act, there are authorized to be appropriated $10,000,000 in each of the fiscal years 1983, 1984, 1985, 1986, and 1987.

"(c)(1) The Task Force established by title VII of the Energy Security Act shall also conduct and support research on advanced flue-gas cleaning and precombustion fuel treatment technologies and inherently low-emission combustion processes (including atmospheric and pressurized fluidized bed combustion).

"(2) There are authorized to be appropriated to a member of such Task Force for fiscal years 1984 through 1988 $50,000,000 for the purposes of funding a joint project among the Tennessee Valley Authority and such others as may be appropriate, including a research institute representing the electric utility industry and individual electric utilities, for the planning, design, construction, operation, and testing of a demonstration facility for the generation of electricity using an atmospheric fluidized bed combustion process. The provision of such funding shall be contingent on non-Federal participants assuming at least 75 per centum of the costs of such joint project.

"(d)(1) Not later than six months after enactment of this section there shall be established an Acid Precipitation Scientific Review Board with not more than 15 members who shall be appointed by the National Academy of Sciences.

"(2) The Board shall examine and consider all available information regarding the causes, extent and potential environmental impacts of acid deposition, including a review of all the activities being performed by the Acid Precipitation Task Force under section 704(b) of the Energy Security Act.

"(3) The Board shall submit to the Committee on Environment and Public Works of the United States Senate and the Committee on Energy and Commerce of the United States House of Representatives at least two comprehensive reports, one not later than June 30, 1986, and one not later than June 30, 1988, on the results of its examination undertaken in accordance with paragraph (2), including a review of the report(s) submitted to the Committees of Congress by the Task Force as required by subsection (b)(1) of this section, together with the Board's own recommendations for reducing acid deposition and its effects.

"(4) There are authorized to be appropriated $1,000,000 for each of fiscal years 1983 through 1988, for the purposes of carrying out the activities required by this subsection.

"(e)(1) Promptly after the date established by section 186, the Administrator shall submit to the Committee on Environment and Public Works of the United States Senate and the Committee on Energy and Commerce of the United States House of Representatives a report describing the emission limitation and other enforceable measures adopted by the States and approved by the Administrator under section 185(b) or in effect under section 186, for all States in the acid deposition impact region established by section 181.

"(2) The Office of Technology Assessment shall analyze the environmental benefits to be gained through the implementation of the control requirements described by the Administrator in accordance with paragraph (1) of this subsection, the costs of implementing such control requirements, and any potential effects on coal production or markets of implementing such control requirements, on both an aggregate regional and a State-by-State basis. The Office of Technology Assessment shall report its findings to the Committee on Environment and Public Works of the United States

Senate and the Committee on Energy and Commerce of the United States House of Representatives no later than six months after the submission of the report required in paragraph (1).

"(f) Upon receipt of the reports required by subsections (b)(1), (d), (e)(1), and (e)(2), the Committee on Environment and Public Works of the United States Senate and the Committee on Energy and Commerce of the United States House of Representatives shall conduct hearings on the matters contained in such reports and take such other action as each such committee deems appropriate.

"(g) The Administrator shall develop an inventory of sources of oxides of nitrogen in the acid deposition impact region established by section 181 and in each State thereof. Not later than four years after enactment of this part the Administrator shall report to the Committee on Environment and Public Works of the United States Senate and the Committee on Energy and Commerce of the United States House of Representatives on (1) the inventory of sources of oxides of nitrogen developed under this subsection, (2) control technology and methods for new and existing sources for oxides of nitrogen, and (3) any recommendations for requirements to reduce existing emissions or control new emissions of oxides of nitrogen to reduce acid deposition.

"(h) The Administrator and the Secretary of the Treasury shall jointly conduct a study of the potential for a system of fees on the generation of electrical energy in the acid deposition impact region established by section 181, to be used to finance the reductions in emissions required by this part, including the equitable distribution of the funds resulting from such fees. A report of such study shall be submitted to the Congress not later than six months after submittal of the report required by subsection (e)(1) of this section.

"(i)(1) The Administrator is authorized to conduct or make grants to any State or interstate agency for the purposes of conducting the development, refinement and practical demonstration of new, improved, or innovative methods of neutralizing or restoring the buffering capacity of acid altered bodies of water that no longer can support game fish species; and methods of removing from bodies of water toxic metals or other toxic substances mobilized by acid deposition, and to include in such grants such amounts as necessary for the purpose of reports, plans and specifications in connection therewith.

"(2) Grants under this subsection shall not be made for any project in an amount exceeding 75 per centum of the costs thereof as determined by the Administrator.

"(3) Grants under this subsection shall not be made for any project that involves bodies of water that did not contain game fish as established by State law prior to 1970.

"(4) For the purposes of this subsection there are hereby authorized to be appropriated $5,000,000 for each of the fiscal years 1983, 1984, and 1985.

"ACID PRECURSOR CONTROLS

"Sec. 183. (a) There shall be achieved a reduction in annual emissions of sulfur dioxide in the acid deposition impact region established under section 181 of this Act of 8,000,000 tons from the total actual annual level of such emissions between January 1, 1980, and December 31, 1980. Such reduction shall be achieved pursuant to a phased reduction and completed no later than January 1, 1995.

"(b)(1) Emissions of sulfur dioxide from major stationary sources which did not begin operation before January 1, 1981, or which have increased emissions since January 1, 1981 (to the extent of such increase), calculated on an annual basis, shall be added to the amount of sulfur dioxide which the State in which such sources are located is required to reduce not later than January 1, 1995, under section 184 or 185(a).

"(2)(A) Such emissions shall not be so added in any State which during 1980 had no major stationary source which was a utility boiler which had an actual annual average emission rate greater than 1.2 pounds of sulfur dioxide per million British thermal units of heat input.

"(B) Increases in emissions of sulfur dioxide from utility boilers which are coal capable as defined under section 301(a) of the Fuel Use Act and which convert to the use of coal as a primary fuel shall be so added only to the extent such emissions from a particular source exceed 1.5 pounds of sulfur dioxide per million British thermal units of heat input on an annual average.

"(c) Other than as provided in subsection (b)(2)(B), no major stationary source in such region which began operation before January 1, 1981, shall increase its actual rate of emissions of sulfur dioxide over that experienced by such source during calendar year 1980, unless there has been identified for such source a simultaneous net reduction in emissions of sulfur dioxide at one or more points in such region—

"(1) in excess of the emissions which potentially would result from the proposed increase in emission rate, and

"(2) not otherwise required by a State implementation plan under section 110 of this Act or under section 184, 185, or 186 of this part.

This subsection shall not apply to increases in actual rates of emissions of sulfur dioxide from sources in any State in which for each major stationary source of sulfur dioxide which was a utility boiler the emission limitation in effect under an applicable implementation plan at the time of such increases is less than or equal to 1.2 pounds of sulfur dioxide per million British thermal units of heat input on an annual average.

"(d) No major stationary source of sulfur dioxide shall commence operation after January 1, 1995, in such region unless there has been identified for such source a simultaneous net reduction in emissions of sulfur dioxide at one or more points in such region—

"(1) in excess of the emissions which potentially would result from the proposed new source, and

"(2) not otherwise required by a State implementation plan under section 110 of this Act or under section 184, 185, or 186 of this part.

This subsection shall not apply to any major stationary source which adopts the best available control technology, as defined in section 169(3) or 171(3) as appropriate for the location of the proposed new source, and which attains at least the most stringent emission limitation shown by an adequate operating history to have been achieved in practice by a major stationary source of the same size, type, and class within the region established under section 181 of this Act.

"(e) No major stationary source of oxides of nitrogen in such region which began operation before January 1, 1981, shall increase its actual rate of emissions of oxides of nitrogen as measured in pounds of oxides of nitrogen per million British thermal units of heat input over the greater of that experienced by such source during calendar year 1980, or during the thirty-day period (excluding days on which such source did not operate) immediately preceeding the date of enactment of this subsection, unless there has been identified for such source a simultaneous net reduction in emissions of oxides of nitrogen at one or more points in such region—

"(1) in excess of the emissions which potentially would result from the proposed increase in emission rate, and

"(2) not otherwise required by a State implementation plan under section 110 of this Act.

The preceding sentence shall not apply to emissions of oxides of nitrogen from utility boilers which are coal capable as defined under section 301(a) of the Fuel Use Act and which convert to the use of coal as a primary fuel.

"REGIONAL SULFUR DIOXIDE REDUCTION ALLOCATION

"SEC. 184. (a) The Governors of all of the thirty-one States within the acid deposition impact region shall enter into negotiations to establish sulfur dioxide emission reduction requirements for each State within the region sufficient to achieve the total reduction required under section 183(a).

"(b) An agreement to allocate sulfur dioxide emission reductions entered into under this section shall be binding and enforceable under sections 113 and 304 of this Act on each State within the acid deposition impact region, but only upon notification to the Administrator by the Governors of 75 per centum of the States in the acid deposition impact region, within eighteen months after enactment of this part, that such agreement has been reached.

"STATE SULFUR DIOXIDE REDUCTION REQUIREMENTS

"SEC. 185. (a)(1) If the Governors fail to reach agreement within eighteen months after the enactment of this part for the allocation of sulfur dioxide reduction under section 184 sufficient to achieve the requirements of section 183(a), each State shall be required to achieve within its borders a reduction in annual sulfur dioxide emissions equal to that fraction of 8,000,000 tons which is the ratio of all the actual utility emissions in such State in excess of 1.5 pounds of sulfur dioxide per million British thermal units of heat input averaged over the period January 1, 1980, to December 31, 1980, to the total in all States in the region of all the actual utility emissions in excess of 1.5 pounds of sulfur dioxide per million British thermal units of heat input averaged over such period.

"(2) The Governors of any two or more States within the region may by agreement reallot among agreeing States the reductions required under subsection (a)(1) provided that the total reductions equal the total required under subsection (a)(1).

"(b)(1) Not later than forty-two months after the enactment of this part, each State shall adopt enforceable measures to achieve the reduction in sulfur dioxide emissions required by section 184 or subsection (a) of this section, including emission limitations and schedules for compliance for sources within such State and other means of emission reduction in accordance with section 187 of this Act. The Governor of such State shall submit such measures to the Administrator for review in accordance with paragraph (2) of this subsection and section 110(a)(3), and to the Governors of all other States in the acid deposition impact region for comment.

"(2) Review and approval of measures submitted under this subsection shall be as provided in section 110(a)(3). The Administrator shall approve such measures submitted under paragraph (1) of this subsection if, taking into consideration the comments of Governors of other States in such region, the Administrator finds that such measures—

"(A) contain enforceable requirements for continuous emission reduction,

"(B) contain requirements for monitoring by the source and enforcement agencies to assure that the emission limitations are being met, and

"(C) are adequate to achieve the reduction in sulfur dioxide emissions for such State required pursuant to section 184 or subsection (a) of this section within the time specified in section 183(a) of this Act.

"(3) Each emission limitation, schedule for compliance or other measure adopted and approved under this subsection shall be deemed a requirement of the State implementation plan approved or promulgated for such State under section 110 of this Act.

"(4) In the case of any major stationary source in a State listed in section 181, which is not by December 31, 1985, in full compliance with the applicable implementation plan for sulfur dioxide in effect on January 1, 1981, the owner or operator of such source shall be subject to:

"(A) the emission limitation established by section 186 for all facilities in such State owned or operated by such owner or operator, and

"(B) a noncompliance penalty established under section 120 for each such source or facility, including each electric generating facility, for the period from the original date for compliance under the applicable implementation plan until actual compliance with the emission limitation established under this paragraph.

"(5)(A) The enforceable measures adopted under this subsection shall include schedules for compliance which specify actions to be performed leading toward final compliance and increments of progress to be achieved by dates in advance of the dates by which the State requires each particular source to comply with the emission limitation necessary to attain the reduction for such State under section 184 or 185(a). The State in adopting such measures and the Administrator in reviewing such measures shall be encouraged to stage or phase such compliance dates so that to the extent practicable significant emission reduction under this part is achieved prior to January 1, 1995.

"(B) Each major stationary source which proposes to comply with an emission limitation established under this subsection or section 186 by any means other than an innovative system of continuous emission reduction or the replacement of existing facilities with new facilities of substantially lower emissions shall comply with such emission limitation not later than January 1, 1993.

"MAJOR STATIONARY SOURCE SULFUR DIOXIDE REDUCTION REQUIREMENTS

"SEC. 186. In any State in the acid deposition impact region established by section 181 of the Act which has not in accordance with section 185(b)(1) of this Act adopted measures to achieve the reduction required by section 184(a) or section 185(a) of this Act within forty-two months after enactment of this part, or which has not had such measures approved by the Administrator under section 185(b)(2) of this Act within six months after the submission of such measures, the owner or operator of each fossil-fuel-burning electric generating facility which is a major stationary source which is not subject to section 111(a) shall comply with an emission limitation or limitations for all such facilities owned or operated by the same entity in such region equivalent to an average among such facilities of 1.2 pounds of sulfur dioxide per million British thermal units of heat input on a thirty-day average. The owner or operator of each such facility shall submit to the Administrator a plan and schedule of compliance for achieving such emission limitation or equivalent emission reduction in accordance with section 187 of this Act, not later than four years after the enactment of this part or six months after the date on which such owner or operator becomes subject to such emission limitation, whichever is later. The Administrator shall approve such plan and schedule for compliance if it—

"(A) contains enforceable requirements for continuous emission reduction;

"(B) contains requirements for monitoring by the source and enforcement agencies to assure that the emission limitations are being met; and

"(C) will achieve the emission reduction required by this section at the earliest practicable date, but no later than January 1, 1995.

Failure of such owner or operator to submit such approvable plan and schedule within the time provided in this section, failure to comply with the plan and schedule of compliance, and failure to achieve the emission reduction required by this section at the earliest practicable date, but no later than January 1, 1995, shall be violations of emission limitations for the purposes of sections 113, 120, and 304 of this Act.

"ENFORCEABLE EMISSION REDUCTION PROGRAMS

"SEC. 187. (a) For the purposes of maintaining the limitation on emissions required by section 183(c) of this Act or attaining emission reductions required by section 183(a), 184, 185, or 186 of this Act, the following methods or programs for net emission reduction may be used, in addition to enforceable continuous emission reduction measures, by a State or the owner or operator of a source, if emission limitations under such methods or programs are enforceable by the Federal Government, States other than those in which the emissions occur, and citizens under section 304 of this Act:

"(1) least emissions dispatch to meet electric generating demand at existing generating capacity;

"(2) retirement of major stationary sources at an earlier date than provided in schedules on file with the

Federal Energy Regulatory Commission, the Internal Revenue Service, or State utility regulatory agencies;

“(3) investments in energy conservation where reductions in emissions can be identified with such investments;

“(4) trading of emission reduction requirements and actual reductions on a State or regional basis, for which States and the Administrator are authorized to establish emission reduction banks or brokerage institutions to facilitate such trading; and

“(5) precombustion cleaning of fuels.”.

INTERSTATE POLLUTION

SEC. 121. (a) Section 110(a)(2)(E) of the Clean Air Act is amended—

(1) by inserting “or sources” after “source”;

(2) by striking “prevent” and inserting in lieu thereof “interfere with”; and

(3) by inserting after “visibility,” the following: “or (III) contribute to atmospheric loadings of pollutants or their transformation products which may reasonably be anticipated to cause or contribute to an adverse effect on public health or welfare or the environment in any other State or foreign country.”.

(b) Section 123 of the Clean Air Act is amended as follows:

(1) in the second sentence of subsection (c), by striking "immediate vicinity" and inserting in lieu thereof "impact area";

(2) in the fourth sentence of subsection (c), by striking all that language preceding "prohibit" and inserting in lieu thereof "The Administrator may";

(3) adding a new subsection (d) as follows:

"(d) The Administrator shall within one year of enactment complete a review of the emission limits for all existing major sources which have come into existence since 1970 or which have raised the stack height since 1970, in order to determine whether emission limits for such sources are inappropriately based upon modeling credit for stack height above good engineering practice. If emission limits are determined to be inappropriately based, the Administrator shall require the State, within six months, to correct the emission limit to conform with requirements of this section. It shall be the burden of the operator of each such source to demonstrate the correct stack height credit to be used in determining proper emission limits.".

(c) Section 126 of the Clean Air Act is amended as follows:

(1) by adding a new subsection as follows:

"(d) Emission of an air pollutant which, by itself or in combination, reaction, or transformation, adversely affects the public health or welfare of another State, is in violation of this section.".

(2) in subparagraph (B) of subsection (a)(1), by striking "in excess of the national ambient air quality standards";

(3) in subsection (b)—

(A) in the first sentence, following "major source", by inserting "or group of sources";

(B) by striking "110(a)(2)(E)(i)" and inserting in lieu thereof "110(a)(2)(E) or this section";

(4) in subsection (c)—

(A) in the first sentence, following the words "violation of", inserting "this section and";

(B) striking "110(a)(2)(E)(i)" wherever it appears and inserting in lieu thereof "110(a)(2)(E) or this section";

(C) in paragraph (2) insert before the period the phrase, "or to continue operation in violation of subsection (d) more than two years after the date of such finding without the installation of reasonably available control technology".

(d) Section 302(h) of the Clean Air Act is amended by inserting "precipitation," following "effects on" the second time it appears and by inserting before the period a comma and "whether caused by transformation, conversion, or combination with other air pollutants."

(e) Section 304(a)(1) of the Clean Air Act is amended by inserting—

(i) inserting a comma after "Act";

(ii) striking "or"; and

(iii) inserting at the end thereof the following: "or (C) section 126,".

TITLE II—AMENDMENTS RELATING PRIMARILY TO MOBILE SOURCES

HEAVY DUTY VEHICLE EMISSIONS

SEC. 201. (a) Section 202(a)(3)(A) of the Clean Air Act is amended—

(1) in clause (ii) by inserting ", in the case of oxides of nitrogen," after "Unless" and after "unless";

(2) in clause (ii) by striking out "1983" and inserting in lieu thereof "1984";

(3) in clause (iii) by striking out in the last sentence all after "Such standards shall" and inserting in lieu thereof "be effective beginning four model years after the model year in which such standards are promulgated and shall apply for a period of at least four model years. The Administrator is authorized to make appropriate arrangements with the National Academy

of Sciences to review the technological feasibility of any proposed standard for particulate matter."; and

(4) by adding at the end thereof the following new clause:

"(vi) In promulgating or revising any standard or determining eligibility of any standard for revision under this paragraph the Administrator shall take into account for each such pollutant the effect of attaining the proposed standard on attaining an existing or proposed standard for each other pollutant. In establishing emission standards under subsection (a) for heavy duty vehicles or engines, in revising such a standard under subparagraph (B), or in changing such a standard under subparagraph (E), the Administrator is authorized to prescribe standards for emissions of oxides of nitrogen and particulate matter for diesel-powered motor vehicles and motor vehicle engines which take effect in the same model year.".

(b) Section 202(a)(3)(B) of the Clean Air Act is amended—

(1) by striking out in the first sentence "During" and all that follows through "thereafter, the" and inserting in lieu thereof "The";

(2) by striking out in the first sentence "subparagraph (A) (ii)" and inserting in lieu thereof "subparagraph (A)((ii) (II)";

(3) by striking out "three" each place it appears and inserting in lieu thereof in each instance "four"; and

(4) by striking out in the third sentence "production of" and inserting in lieu thereof "production during".

(c) Section 202(a)(3)(E) of the Clean Air Act is amended—

(1) in clause (i) by inserting after the first sentence the following new sentence: "The Administrator shall consider studies available from the Health Effects Institute."; and

(2) in clause (ii)—

(A) by striking out in the first sentence "study and" and inserting in lieu thereof "study or";

(B) by striking out "(ii)" in the first sentence thereof; and

(C) by inserting before the period at the end of the first sentence the following: "applicable to any pollutant other than hydrocarbons and carbon monoxide".

(d) Section 202(e)(2) of the Clean Air Act (as redesignated by section 203(1) of this Act) is amended to read as follows:

"(2) in the case of any other motor vehicle or motor vehicle engine (other than motorcycles or motorcycle engines) be a period of use which is the greater of—

"(A) one-half of—

"(i) the average time or use between first use and engine retirement or rebuild; or

"(ii) any other measure of actual life, as determined by the Administrator for the affected class or category; or

"(B) the duration or mileage of the published commercial warranty; and".

LIGHT DUTY VEHICLE EMISSIONS

SEC. 202. Section 202(b) of the Clean Air Act is amended—

(1) in paragraph (1)(B)—

(A) by inserting in the second sentence "gasoline-powered" after "from" the first time it appears;

(B) by inserting in the second sentence ", and from diesel-powered light duty vehicles and engines manufactured during the model years 1981 and 1982 and during the model years 1985 and thereafter," after "thereafter";

(C) by inserting after the second sentence a new sentence to read as follows: "The regulations under subsection (a) applicable to emissions of oxides of nitrogen from diesel-powered light duty vehicles and engines manufacturered during model years 1983 and 1984 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 1.5 grams per vehicle mile."; and

(D) by striking "preceeding sentence" in the third sentence and inserting in lieu thereof "first sentence of this subparagraph";

(2) in paragraph (1) by adding the following new subparagraph:

"(D) Unless waived as provided in paragraph (8), the regulations under subsection (a) applicable to emissions of particulate matter from light duty vehicles and engines manufactured during model year 1986 and thereafter shall contain low altitude standards which provide that such emissions from such vehicles and engines may not exceed 0.2 gram per vehicle mile of particulate matter.";

(3) in paragraph (6)(B) by striking out in the first sentence thereof "four" and inserting in lieu thereof "two"; and

(4) by adding at the end thereof the following new paragraph:

"(8)(A) Upon the petition of any manufacturer, the Administrator, after notice and opportunity for public hearing, may waive the standard required under subparagraph (D) of paragraph (1) to not exceed 0.6 gram per vehicle mile of particulate matter for any class or category of light duty vehicles or engines manufactured by such manufacturer during the two model year period beginning with model year 1986. Such waiver may be granted only if the Administrator determines—

"(i) that such waiver would not endanger public health; and

"(ii) the applicant has established that effective control technology, processes, operating methods, or other alternatives are not available or have not been available with respect to the class or category of light duty vehicles or engines in question for a sufficient period of time to achieve compliance prior to the effective date of such standards, taking into consideration costs and fuel economy.

"(B) Upon the petition of any manufacturer, the Administrator, after notice and opportunity for public hearing, may waive the standard required under paragraph (1) (B) to not to exceed 1.5 grams per vehicle mile of oxides of nitrogen for any class or category of diesel-powered light duty vehicles or engines manufactured by such manufacturer during the two model year period beginning with model year 1986, if such waiver is necessary to, and will in fact, avoid granting a waiver with respect to particulate matter under subparagraph (A) of this paragraph.".

LIGHT DUTY TRUCK EMISSIONS

SEC. 203. Section 202 of the Clean Air Act is amended—

(1) by redesignating subsections (d) through (f) as subsections (e) through (g), respectively;

(2) by inserting after subsection (c) the following new subsection:

"(d)(1) The regulations under subsection (a) applying to model year 1983 light duty trucks shall contain low altitude standards providing that emissions from such vehicles may not exceed 1.7 grams per vehicle mile of hydrocarbons and 18 grams per vehicle mile of carbon monoxide. The regulations under subsection (a) applying to model year 1984 and later light duty trucks shall contain low altitude standards providing that emissions from such vehicles may not exceed 0.8 gram per vehicle mile of hydrocarbons and 10 grams per vehicle mile of carbon monoxide. The regulations under subsection (a) applying to model years 1983 and 1984 light duty trucks shall contain low altitude standards providing that emissions from such vehicles may not exceed 2.3 grams per vehicle mile of oxides of nitrogen. The regulations under subsection (a) applying to model year 1985 and later light duty trucks which have gross vehicle weights of 6,000 pounds or less shall contain low altitude standards providing that emissions from such vehicles may not exceed 1.2 grams per vehicle mile of oxides of nitrogen. The regulations under subsection (a) applying to model year 1985 and later light duty trucks which have gross vehicle weights exceeding 6,000 pounds shall contain low altitude standards providing that emissions from such vehicles may not exceed 1.7 grams per vehicle mile of oxides of nitrogen.

"(2)(A) Unless waived as provided in subparagraph (B), the regulations under subsection (a) applicable to emissions of particulate matter from light duty trucks and engines manufactured during model year 1986 and thereafter shall contain low altitude standards which provide that such emissions from such vehicles and engines may not exceed 0.26 gram per vehicle mile of particulate matter.

"(B) Upon the petition of any manufacturer, the Administrator, after notice and opportunity for public hearing, may waive the standard required under subparagraph (A) to not to exceed 0.6 gram per vehicle mile of particulate matter for any class or category of light duty trucks or engines manufactured by such manufacturer during the two model year period beginning with model year 1986. Such waiver may be granted only if the Administrator determines that—

"(i) such waiver would not endanger public health; and

"(ii) the applicant has established that effective control technology, processes, operating methods, or other alternatives are not available or have not been available with respect to the class or category of light duty truck or engine in question for a sufficient period of time to achieve compliance prior to the effective date of such standards, taking into consideration costs and fuel economy.

"(C) Upon the petition of any manufacturer, the Administrator, after notice and opportunity for public hearing, may waive the standard for oxides of nitrogen required under paragraph (1) of this subsection to not to exceed 1.7 grams per vehicle mile of oxides of nitrogen for any class or category of diesel-powered light duty trucks or engines which have gross vehicle weights of 6,000 pounds or less, or not to exceed 2.3 grams per vehicle mile of oxides of nitrogen for any class or category of diesel-powered light duty trucks or engines which have gross vehicle weights exceeding 6,000 pounds, manufactured by such manufacturer during the two-model-year period beginning with model year 1986, if such waiver is necessary to, and will in fact, avoid granting a waiver with respect to particulate matter under subparagraph (B) of this paragraph."; and

(3) by striking out "light-duty" each place it appears and inserting in lieu thereof in each instance "light duty".

HIGH ALTITUDE MOTOR VEHICLE EMISSIONS

SEC. 204. (a) Section 202 of the Clean Air Act is further amended by inserting "low altitude" before "standards" each place it appears in subsections (b)(1)(A) and (b)(1)(B).

(b) Section 202 (g) of the Clean Air Act, as redesignated by section 203 of this Act, is amended to read as follows:

"(g)(1) In establishing, under subsection (a), emission standards for model year 1984 and later light duty vehicles and light duty trucks, the Administrator shall establish—

"(A) low altitude emission standards which shall establish levels of emissions which may not be exceeded under low altitude conditions; and

"(B) high altitude emission standards which shall establish levels of emissions which may not be exceeded under high altitude conditions.

"(2) The high altitude standards described in paragraph (1)(B) applying to—

"(A) exhaust emissions of oxides of nitrogen from such vehicles manufactured in model year 1984 and later; and

"(B) exhaust emissions of carbon monoxide from such light duty vehicles manufactured in model year 1984 and later and from such light duty trucks manufactured in model year 1985 and later,

shall be equal in numerical value to the low altitude standards applying to emissions of such pollutants from such vehicles.

"(3) Except as provided in paragraph (2), the high altitude standards described in paragraph (1)(B) applying to every pollutant for which the Administrator has established low altitude emission standards shall require at least a percentage of reduction in the emissions of such pollutant (compared to the emissions under high altitude conditions from such vehicles manufactured in the model year preceding the model year for which an emission standard was first in effect for such pollutant, or, in the case of exhaust emissions of hydrocarbons from light duty vehicles, in model year 1970) equal to the percentage of reduction in the emissions from such vehicles required by such low altitude standards (compared to the emissions under low altitude conditions from such vehicles manufactured in the model year preceding the model year for which an emission standard was first in effect for such pollutant, or, in the case of exhaust emissions of hydrocarbons from light duty vehicles, in model year 1970). In no event shall such high altitude standards establish a standard numerically more stringent than a corresponding low altitude standard.".

(c) Section 206 of the Clean Air Act is amended—

(1) in subsection (a)(1) by inserting "under low altitude conditions (except as otherwise provided in subsection (f)(1))" after "conforms"; and

(2) by amending subsection (f) to read as follows:

"(f)(1) The Administrator may issue a certificate of conformity under subsection (a) for light duty vehicles or light duty trucks manufactured in model year 1984 or later only if—

"(A) the vehicles comply under low altitude conditions with the applicable low altitude emission standards, and are capable by design, or by adjustments or modifications which have been approved by the Administrator under paragraph (3)(B), of complying under high altitude conditions with the applicable high altitude emission standards;

"(B) the vehicles comply under low altitude conditions with the applicable low altitude emission standards, and are subject to an exemption granted under paragraph (4); or

"(C) the vehicles comply under high altitude conditions with the applicable high altitude emission standards and the manufacturer demonstrates to the satisfaction of the Administrator that virtually all such vehicles are intended for principal use at elevations of at least 4,000 feet above sea level.

"(2) The Administrator shall determine the durability under high altitude conditions of the emission control performance of vehicles using data from tests conducted under low altitude conditions on the same or similar vehicles, unless the Administrator determines that it is necessary or appropriate to conduct separate tests under high altitude conditions.

"(3) In the case of vehicles which require adjustments or modifications to meet the requirements of paragraph (1)(A)—

"(A) the manufacturer shall describe such adjustments or modifications (and the readjustments and remodifications referred in subparagraph (B)(ii)) in the application for a certificate of conformity;

"(B) the Administrator shall approve such descriptions if the Administrator determines that—

"(i) the adjustments or modifications are sufficient to enable such vehicles to meet the requirements of paragraph (1)(A);

"(ii) the readjustments or remodifications are in accordance with section 215(b)(3); and "(iii) the adjustments or modifications, and readjustments or remodifications, can be performed by the manufacturer's authorized dealers;

"(C) the descriptions referred to in subparagraph (B) may provide for adjustments or modifications, including changes in gear ratios, to ensure adequate performance under high altitude conditions, and, in the case of readjustments or remodifications, under low altitude conditions;

"(D) the certificate of conformity issued for such vehicles shall not be in effect, and shall state that it shall not be in effect, with respect to an individual vehicle intended for principal use in a designated high altitude area if the manufacturer has failed to make all reasonable efforts (as defined by regulations which shall be promulgated by the Administrator before model year 1984) to ensure that such vehicle has been adjusted or modified in accordance with such description prior to the sale or delivery to the ultimate purchaser; and

"(E) at the time such adjustments or modifications (or readjustments or remodifications) are performed on an individual vehicle, the vehicle shall be affixed with a device specified by the Administrator indicating the vehicle has been so adjusted or modified (or readjusted or remodified).

"(4)(A) Upon application of a manufacturer, the Administrator shall exempt any motor vehicles, for a period of one model year, from the high altitude requirements of paragraph (1)(A) if—

"(i) the Administrator has approved high altitude performance adjustment instructions for such vehicles under section 215, and

"(ii) the number of such vehicles intended for principal use in designated high altitude areas represents not more than 15 percent of the manufacturer's anticipated combined sales in that model year of light duty vehicles and light duty trucks intended for principal use in designated high altitude areas.

"(B) A certificate of conformity issued for vehicles subject to an exemption granted under subparagraph (A) shall not be in effect, and shall state that it shall not be in effect, with respect to an individual vehicle intended for principal use in a designated high altitude area if the manufacturer has failed to make all reasonable efforts (as defined by regulations which shall be promulgated by the Administrator before model year 1984) to ensure that such vehicle has been adjusted or modified before sale or delivery to the ultimate purchaser in accordance with the instructions referred to in subparagraph (A)(i).

"(C) At the end of any model year in which a manufacturer is granted exemptions under subparagraph (A), the manufacturer shall inform the Administrator of the manufacturer's actual combined sales of light duty vehicles and light duty trucks intended for principal use in designated high altitude areas and of such vehicles subject to such exemptions. If the number of vehicles subject to such exemptions exceeded 15 per centum of such actual combined sales then the Administrator shall determine the amount of such excess and shall, for the next succeeding model year in which it is practicable to do so, reduce by such amount the maximum number of such exemptions the manufacturer otherwise could be granted under subparagraph (A). Any manufacturer whose number of vehicles subject to such exemptions exceeds 15 per centum of such actual combined sales for three successive model years shall not be granted any such exemptions for the next model year for which such manufacturer has not previously been granted such exemptions.

"(D) At the end of any model year in which a manufacturer manufactures vehicles issued a certificate of conformity under paragraph (1)(C), the manufacturer shall inform the Administrator of the actual sales of such vehicles intended for principal use at elevations of at least 4,000 feet above sea level, and of any such vehicles intended for principal use at elevations less than 4,000 feet above sea level.".

(d) Section 207(h)(1) of the Clean Air Act is amended—

(1) by striking out "light-duty";

(2) by inserting ", in the case of the sale of a new light duty vehicle," after "including"; and

(3) by adding at the end thereof the following new sentence: "In the case of a model year 1984 or later light duty vehicle or light duty truck intended for principal use in a designated high altitude area, the certificate furnished by the dealer shall certify that any adjustments or modifications required by section 206(f)(3)(D) or section 206(f)(4)(B) have been performed.".

(e) Section 215 of the Clean Air Act is amended—

(1) in subsection (a)(1)—

(A) by inserting a dash following the word "with" the third time it appears;

(B) by designating the remainder of the sentence as subparagraph (A),

(C) by striking out the period at the end of the sentence and inserting in lieu thereof "; or"; and

(D) by adding at the end thereof the following new subparagraph:

"(B) the adjustments and modifications and readjustments and remodifications referred to in section 206(f).";

(2) in subsection (a)(2)—

(A) by striking out "paragraph (1)" and inserting in lieu thereof "paragraph (1)(A)";

(B) by inserting "overall" after "insure";

(C) by striking out "with respect to each standard under section 202"; and

(D) by adding at the end thereof the following new sentence: "Such instructions may also include adjustments or modifications, including changes in gear ratios, to assure adequate performance under high altitude conditions."; and

(3) by amending subsection (d) to read as follows:

"(d) Manufacturers shall make available the instructions referred to in subsection (a)(1)(A) and the descriptions referred to in subsection (a)(1)(B) to their authorized dealers, and upon request to service and repair establishments, in high altitude areas.".

(f) Section 313 of the Clean Air Act is amended by inserting "(a)" after "Sec. 313." and by adding at the end thereof the following new subsection:

"(b)(1) Upon the request of any national association of dealers, the membership of which includes a majority of the dealers selling light duty vehicles and light duty trucks in the United States, the Administrator shall compile data relating to the availability and distribution to such dealers located in designated high altitude areas of models of new light duty vehicles or light duty trucks manufactured by any manufacturer in any model year.

"(2) In compiling such data, the Administrator may—

"(A) utilize information submitted to him by the national association, any dealer, or any affected manufacturer; and

"(B) reasonably require any manufacturer specified in the request filed pursuant to paragraph (1) to submit to the Administrator the data set forth in paragraph (3), so long as such data does not obtain or publish information which would identify shipments to individual dealers.

"(3) Not later than six months after the date on which a request is made under subsection (a), the Administrator shall submit to the Congress and publish in the Federal Register a report setting forth the data compiled under this subsection. For each model year subject to such request the report shall, with respect to any affected manufacturer, include—

"(A) a list of each new light duty vehicle or light duty truck model subject to an exemption under section 206(f)(4); and

"(B) a statement of the number of new light duty vehicles and light duty trucks of each model specified in the request sold to motor vehicle dealers located in designated high altitude areas and the total number of each such model sold by such manufacturer elsewhere throughout the United States.

"(4) If requested as provided for in paragraph (1), the data compiled, submitted, and reported to the Congress under this subsection shall also include any reasonably available data on the costs of complying with the high altitude emission standards required by section 202(g) and any effect of those costs on sales of vehicles subject to such standards. If necessary to allow adequate time to gather such data, the Administrator may postpone by six months the requirement of paragraph (3) for submitting to the Congress and publishing in the Federal Register the portion of such report required by the first sentence of this paragraph.

"(5) For purposes of this subsection, the term 'model' includes each engine and transmission combination within a vehicle line. All other terms used in this subsection shall have the same meaning as in part A of title II.".

SULFUR EMISSIONS

SEC. 205. Section 202 of the Clean Air Act is amended by adding at the end thereof the following new subsection:

"(h) At such time as diesel-powered vehicles constitute 10 percent of the total annual sales of light duty vehicles and light duty trucks, the Administrator shall promulgate regulations prohibiting the sale of diesel fuel for use in motor vehicles with a sulfur content of more than 0.05 percent by weight or such lesser limit as the Administrator determines is necessary to protect the public health or welfare. Such regulations shall take effect no more than 48 months after January 1 of the first calendar year in which diesel-powered vehicles constitute 10 percent of the total annual sales of all light duty vehicles and light duty trucks.".

IMPORTED VEHICLES

SEC. 206. (a) Section 203(b)(2) of the Clean Air Act is amended—

(1) by inserting "(A)" after "(2)";

(2) by striking all in the first sentence following "refused admission into the United States," and inserting in lieu thereof the following: "except in the following circumstances—

"(i) in the case of a vehicle or engine which is one of a class of vehicles or engines for which an application for a certificate of conformity under section 206 is pending before the Administrator, the Secretary of the Treasury and the Administrator may, by joint regulation, provide for deferring final determination as to admission and authorizing the delivery of such a motor vehicle or engine offered for import to the owner or consignee thereof upon such terms and conditions (including the furnishing of a bond) as may appear to them appropriate to assure that any such motor vehicle or engine is in conformity with the standards, requirements and limitations applicable to it under this part; or

"(ii) where the new motor vehicle or new motor vehicle engine offered for importation or imported by an individual is five model years old or older."; and

(3) by redesignating the second sentence as subparagraph (B).

(b) Section 206(a)(1) of the Clean Air Act is amended by inserting in the third sentence after "three hundred" the phrase "(other than a person who is a manufacturer solely due to the importation of motor vehicles or motor vehicle engines)".

VEHICLE IMPORTS INTO TERRITORIES

SEC. 207. Section 203(b)(2) of the Clean Air Act is amended by adding a new subparagraph at the end thereof as follows:

"(C) For purposes of this paragraph, the importation of a vehicle for commercial or public transportation use, which would otherwise be unavailable, into and solely for use within a Territory of the United States which the Administrator, upon application of the Governor of such Territory, finds is not a nonattainment area (as defined in section 171(2)) and which imports fewer than 500 vehicles per year, shall not be considered importation into the United States.".

LEAD IN GASOLINE

SEC. 208. Section 211(g)(2) of the Clean Air Act is amended by adding at the end thereof the following: "No regulation of the Administrator under this section controlling lead additives in gasoline shall allow the average lead content per gallon of leaded gasoline to exceed in future quarters the average lead content per gallon of leaded gasoline that was achieved during the quarter ending June 30, 1982. Nor shall the regulations of the Administrator under this section regulating the lead content of gasoline (40 C.F.R. 80) in effect on July 1, 1982, be amended to allow any increase in the average lead content per gallon of gasoline.".

DEFINITIONS

SEC. 209. (a) Section 216 of the Clean Air Act is amended by inserting "(a)" after "SEC. 216." and by adding at the end thereof the following:

"(7) The terms 'heavy duty vehicle' and 'heavy duty vehicle and engine' mean any motor vehicle (including the engine thereof) which has—

"(A) a gross vehicle weight (as determined under regulations promulgated by the Administrator) of more than 8,500 pounds,

"(B) a vehicle curb weight (as determined under regulations promulgated by the Administrator) of more than 6,000 pounds, or

"(C) a basic vehicle frontal area of more than 45 square feet.

"(8) The terms 'light duty truck' and 'light duty truck and engine' mean any motor vehicle (including the engine thereof) with a gross vehicle weight (as determined under regulations promulgated by the Administrator) of 8,500 pounds or less and a curb weight of 6,000 pounds or less (as determined under regulations promulgated by the Administrator) and which—

"(A) is designed primarily for purposes of transportation of property or is a derivation of such a vehicle,

"(B) is designed primarily for transportation of persons and has a capacity of more than 12 persons, or

"(C) has special features enabling off-street or off-highway operation and use.

"(9) The terms 'light duty vehicle' and 'light duty vehicle and engine' mean a motor vehicle (including the engine thereof) designed primarily for transportation of persons which has a capacity of 12 persons or less.

"(10) The terms 'designated high altitude area' and 'designated high altitude areas' mean all counties identified in the regulations in effect on December 31, 1981, regarding high altitude emission standards (40 C.F.R. 86.082.30(a)(15)) which are in a State in which one or more of such counties was in whole or in part during the calendar year 1981 a nonattainment area (as defined in section 172 (2)) for carbon monoxide or photochemical oxidants.

"(11) The term 'high altitude conditions' means an elevation of approximately 5,300 feet above sea level, or a barometric pressure corresponding to such elevation.

"(12) The term 'low altitude conditions' has the meaning given to such term in regulations in effect on December 31, 1981 (40 C.F.R. 86.082-2), unless the Administrator by regulation promulgates another definition for such term.

"(b) Notwithstanding the definitions of 'heavy duty vehicle' and 'light duty truck' in subsection (a), the Administrator, after notice and opportunity for a hearing, may define as a heavy duty vehicle instead of as a light duty truck any motor vehicle with a gross vehicle weight (as determined under regulations promulgated by the Administrator) exceeding 6,000 pounds, but not exceeding 8,500 pounds, which the Administrator determines is designed primarily for commercial (including agricultural) use, and not for uses performed by light duty trucks. Any vehicles defined under the preceding sentence as heavy duty vehicles shall be subject to the high altitude provisions of sections 202(g), 206(f), 207(h)(1), 215, and 313(b). The high altitude emission standards established under section 202(g) for such vehicles shall be established under the provisions of such section applying to light duty trucks, except that with respect to such vehicles the references in that section to light duty truck emission standards shall be considered to be references to heavy duty vehicle emission standards.".

(b) Section 202(b)(3) of the Clean Air Act is amended—

(1) by striking out subparagraphs (B) and (C) thereof;

(2) by striking out "(i)"; and

(3) by striking out "(ii)" and inserting in lieu thereof "(B)".

TITLE III—OTHER AMENDMENTS AND PROVISIONS

JUDICIAL REVIEW

SEC. 301. (a) Section 307(b)(1) of the Clean Air Act is amended to read as follows:

"(b)(1) A petition for review of any final action of the Administrator under this Act which is locally or regionally applicable may be filed only in the United States Court of Appeals for an appropriate circuit. A petition for review of any final action of the Administrator under this Act which is nationally applicable may be filed in the United States Court of Appeals for the District of Columbia or in any United States Court of Appeals for a circuit in which the petitioner resides or transacts business.

"(2)(A) If petitions for review of the same agency action have been filed in two or more courts of appeals and the Administrator has received written notice of the filing of the first such petition more than thirty days before receiving written notice of the filing of the second petition, then the record shall be filed in that court in which the first petition was filed. If petitions for review of the same agency action have been filed in two or more courts of appeals and the Administrator has received written notice of the filing of one or more petitions within thirty days or less after receiving written notice of the filing of the first petition, then the Administrator shall promptly advise in writing the Administrative Office of the United States Courts that petitions have been filed in two or more courts of appeals, and shall identify each court for which he has written notice that such petitions have been filed within thirty days or less of receiving written notice of the filing of the first such petition. Pursuant to a system of random selection devised for this purpose, the Administrative Office thereupon shall select the court in which the record shall be filed from among those identified by the Administrator. Upon notification of such selection, the Administrator shall promptly file the record in such court. For the purpose of review of agency action which has previously been remanded to the Administrator, the record shall be filed in the court of appeals which remanded such action.

"(B) Where petitions have been filed in two or more courts of appeals with respect to the same agency action and the record has been filed in one of such courts pursuant to paragraph (1), the other courts in which such petitions have been filed shall promptly transfer such petitions to the court of appeals in which the record has been filed. Pending selection of a court pursuant to subsection (1), any court in which a petition has been filed may postpone the effective date of the agency action until fifteen days after the Administrative Office has selected the court in which the record shall be filed.

"(C) Any court in which a petition with respect to any agency action has been filed, including any court selected pursuant to paragraph (2)(A), may transfer such petition to any other court of appeals for the convenience of the parties or otherwise in the interest of justice.

"(3) Any petition for review under this subsection shall be filed within one hundred and twenty days from the date notice of such promulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such one hundred and twentieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise.".

(b) Paragraph (2) of section 307(b) of the Clean Air Act is redesignated as paragraph (4).

AWARD OF FEES

SEC. 302. (a) Section 304(d) of the Clean Air Act is amended by inserting "prevailing or substantially prevailing" before "party" in the first sentence thereof.

(b) Section 307(f) of the Clean Air Act is amended by inserting "to a prevailing or substantially prevailing party" before "whenever".

APPROPRIATIONS

SEC. 303. Section 326 of the Clean Air Act is amended by adding at the end thereof a new subsection as follows:

"(c) There are authorized to be appropriated to carry out the provisions of this Act other than section 182(b)(2), (c), (d), and (i) and other research, development, and demonstration activities, $177,000,000 for fiscal year 1983 and $200,000,000 for each of the four fiscal years beginning thereafter.".

WOOD SMOKE STUDY

SEC. 304. (a) The Administrator of the Environmental Protection Agency shall conduct a study of the effects of wood combustion on ambient air quality, and in particular of emissions of carbon monoxide and particulate matter. Such study shall include a review of existing information on the nature, quantity, and effects of emissions associated with wood combustion. The Administrator shall also undertake such physical, chemical, atmospheric, biomedical, or other research and monitoring as may be necessary to identify any direct or indirect effects of such emissions on public health or welfare.

(b) The Administrator shall undertake research on methods to accurately measure emissions from wood stoves, fireplaces, and other such wood combustion devices, for the purpose of developing a uniform method of measuring such emissions. Such research shall include testing of various models and designs of wood stoves and other such devices for emissions rates. The Administrator may make recommendations on the design and proper operation of wood stoves and other such devices to reduce their emission rates.

(c) The Administrator shall submit to the Congress a report on the study and research required by this section not later than December 31, 1984, together with a report of any regulatory action taken or proposed and any recommendations for legislation. The Administrator shall consider any appropriate use of sections 109, 110, 111, 112, 126, or 303 of the Clean Air Act to control emissions associated with wood combustion.

(d) The studies and research conducted under this section may be undertaken with such cooperation and assistance from universities, private industries, local and State governments as may be available. Each department, agency, and instrumentality of the United States having the capability to do so is authorized and directed to provide assistance to the Administrator in carrying out the requirements of this section, including (notwithstanding any other provision of law) any services which such department, agency, or instrumentality may have the capability to render or obtain by contract with third parties.

(e) For the purposes of this section, the term "wood combustion" means the burning of wood, wood by-products, or wood wastes to produce heat, and is limited to the use of wood for residential, commercial, or institutional applications with a heat input of less than 5,000,000 British thermal units per hour.

INDOOR AIR QUALITY STUDY

SEC. 305. (a) The Administrator of the Environmental Protection Agency shall carry out a research program on indoor air quality. Such program shall be designed to gather data and information on all aspects of indoor air quality in order to contribute to the understanding of health problems associated with the existence of air pollutants in the indoor environment, and to coordinate Federal, State, local, and private research, development, and demonstration efforts relating to the improvement of indoor air quality.

(b) The Administrator may establish such committees, comprised of individuals representing Federal agencies concerned with various aspects of indoor air quality, and such advisory groups, comprised of individuals representing the scientific community, industry, and public interest organizations, as may be necessary to assist in carrying out the research program required by this section. The Administrator shall also consult and coordinate with State and local officials and other interested parties.

(c) The research program required by subsection (a) shall include, but not be limited to—

(1) research, development, and demonstration concerning the identification, characterization, and monitoring of indoor air pollution sources and levels (including research, development, and demonstration relating to the measurement of various pollutant concentrations and their strengths and sources, to high-risk building types, and to instruments for indoor air quality data collection);

(2) research relating to the effects of indoor air pollution on human health;

(3) research, development, and demonstration relating to control technologies to prevent or abate indoor air pollution (including the development, evaluation, and testing of individual and generic control devices and systems); and

(4) the dissemination of information to assure the public availability of the findings of the Administrator pursuant to the research, development, and demonstration activities under this section.

(d)(1) Not later than one year after the date of the enactment of this Act, the Administrator shall submit to Congress a plan for the implementation of the research program required by subsection (a).

(2) Not later than 36 months after such date of enactment, the Administrator shall submit a progress report, including an assessment of future research needs.

(3) Not later than 54 months after such date of enactment, the Administrator shall submit to Congress a final report setting forth the results of the program, assessing the state of knowledge concerning the risks to human health associated with indoor air pollution, assessing the need for further research, and making such recommendations as may be appropriate.

(4) The progress report and the final report submitted under this subsection shall be submitted to the National Academy of Sciences within a reasonable period before the dates required for submittal to Congress and, when submitted to Congress, such reports shall contain any comments provided by the National Academy of Sciences.

(e) Nothing in this section shall be construed to authorize the Administrator to carry out any regulatory program or activity. Nothing in this section shall be construed to limit the authority of the Administrator or of any other agency or instrumentality of the United States under any other authority of law.

(f) The sum of $4,000,000 is authorized to be appropriated for each of the fiscal years 1983 and 1984 to carry out this section.

COLD WEATHER CARBON MONOXIDE EMISSIONS STUDY

SEC. 306. (a) The Administrator shall conduct a study of the feasibility and benefits of requiring motor vehicle design modifications or engine adjustments, or both, for the purpose of reducing emissions of carbon monoxide under cold weather conditions, while maintaining or improving the performance characteristics and fuel economy of such vehicles.

(b) The Administrator shall report to the Congress the findings and recommendations of the study conducted under subsection (a) not later than twoyears after the date of enactment of this section.

CLEAN AIR ACT AMENDMENTS OF 1983

THURSDAY, NOVEMBER 17, 1983

U.S. Senate,
Committee on Environment and Public Works,
Washington, D.C.

The committee met, pursuant to recess, at 10:09 a.m., in room SD-406, Hon. Robert T. Stafford (chairman of the committee) presiding.

Present: Senators Stafford, Humphrey, Randolph, and Baucus.

OPENING STATEMENT OF HON. ROBERT T. STAFFORD, U.S. SENATOR FROM THE STATE OF VERMONT

Senator **Stafford**. The Committee on Environment and Public Works will please come to order.

On behalf of the committee, I welcome our guests this morning and our witnesses.

This is the third committee meeting that the Senator from Vermont has attended so far this morning, which demonstrates the reason why not many of my colleagues on this committee are here at the moment.

If we look a little tired, we were in session and did not get home until after 1 last night, or rather this morning.

This is the second of 2 days of hearings on S. 768, the Clean Air Act Amendments of 1983. On Tuesday, we heard 13 witnesses speak on a variety of provisions in S. 768. Today, we are scheduled to hear from 13 additional witnesses.

Because of the number of statements to be presented, we must ask that witnesses limit their oral testimony to no more than 5 minutes, and I think witnesses have been warned by our staff that that will be necessary. It is something that I always personally regret very much because I know of the effort and the time and the expense that many of you who will be witnesses have made to be here and help the committee in its deliberations. We will have to strictly enforce it today, as we did last time.

I look forward to hearing from each of you, and each of you has my personal gratitude and that of the committee for appearing with us today.

The oral and written record of these two days of hearings will be a valuable part of the committee's upcoming deliberations on reauthorization of the Clean Air Act.

Fortuitously, I have concluded my opening statement just in time for my dear friend and colleague on this committee, Senator Randolph, to arrive and make any statement he wishes.

Senator **Randolph**. What was the word you used?

Senator **Stafford**. Fortuitously.

Senator **Randolph**. Fortuitously.

Senator **Stafford**. Which is not what I would use to describe last night, Senator.

Senator **Randolph**. I met you on the way home at 1 a.m.

Senator **Stafford**. That is right.

OPENING STATEMENT OF HON. JENNINGS RANDOLPH, U.S. SENATOR FROM THE STATE OF WEST VIRGINIA

Senator **Randolph**. Thank you very much, Mr. Chairman.

I have been with the nurses from West Virginia who are visiting here. They too have problems as well as those who are trying to mine coal in West Virginia.

The witnesses today will be a cross section, and I think it is important that we give them the opportunity to proceed with their statements. If, later, I can contribute something in the way of comment or questioning, I will do it. Thank you.

Senator **Stafford**. Thank you very much, Senator Randolph.

I really appreciate your being here this morning.

With no further ado, we will ask the first panel to please come to the witness table. That is Mr. O. B. Burns, vice president, Westvaco Corp. My apologies to all for any errors in pronunciation.

Senator **Randolph**. That is Westvaco.

Senator **Stafford**. Westvaco.

Senator **Randolph**. That is all right, now. Forgive me.

Senator **Stafford**. We get down to the old thing about tomatoes and tomatoes.

Senator **Randolph**. Well, they employ 2,600 West Virginians.

Senator **Stafford**. No wonder you know how to pronounce it!

We also have Mr. J. C. Schwegmann, Kaiser Aluminum Corp.; Mr. John Quarles, chairman, Clean Air Act Project, National Environmental Development Association.

I should have said that Mr. Burns of the Westvaco Corp. is chairman, Air Task Force of the National Association of Manufacturers.

Gentlemen, we are ready to go. Your full statements will appear in the record. Again, I feel badly about the 5-minute rule, but we are simply going to have to do it that way in order to hear all of the witnesses that are scheduled this morning.

So may I go in the order that you are listed? Mr. Burns will be followed by Mr. Schwegmann, to be followed by Mr. Quarles. If that is agreeable, we will begin.

Mr. Burns, you are on.

STATEMENT OF O. B. BURNS, VICE PRESIDENT, WESTVACO CORP., ON BEHALF OF THE NATIONAL ASSOCIATION OF MANUFACTURERS, ACCOMPANIED BY DANIEL W. CANNON, DIRECTOR, ENVIRONMENTAL AFFAIRS

Mr. **Burns**. Thank you, Senator, and good morning, Mr. Chairman, and thank you, Senator Randolph.

I am O. B. Burns, Jr. I am vice president of Westvaco Corp. and chairman of the air task force of the environmental quality committee of the National Association of Manufacturers.

I am accompanied by Daniel W. Cannon, NAM director of environmental affairs.

This testimony on reauthorization of the Clean Air Act is presented on behalf of the National Association of Manufacturers, a voluntary association of over 13,000 corporations, large and small, located in every State.

Eighty percent of the firms are considered to be small business. NAM member companies employ 85 percent of all workers in manufacturing and produce over 80 percent of the Nation's manufactured goods. NAM is affiliated with an additional 158,000 businesses through its associations and councils.

We believe that the Clean Air Act provides a sound framework for a good national air pollution control program. However, no law is perfect, and there is nothing that cannot be improved upon.

We believe that the Clean Air Act does have some defects which, if corrected, could accelerate progress under the program and make all of our efforts even more cost effective. Industry alone is spending billions of dollars each year on air pollution control and would like to see that each of these dollars achieves a maximum degree of air quality control and is spent in a cost-effective manner.

We have made specific points along this line to this distinguished committee and other bodies. However, even though other points could be addressed, on this occasion we would like to focus attention on a provision in the act that has a direct impact on many manufacturing enterprises, particularly if we fulfill our goals of modernizing and expanding American industry.

Section 111 of the act defines the term "standard of performance" with respect to any air pollutant emitted from a category of fossil fuel fired stationary sources as not only "establishing allowable emissions limitations for each category of sources" but also as "requiring the achievement of a percentage reduction in the emissions from such category of sources from the emissions which would have resulted from the use of fuels which are not subject to treatment prior to combustion."

Many of our members believe that Congress did not intend to include industrial boilers in the percentage reduction requirement. Industrial boilers consume less than 10 percent of the total coal consumed in the United States.

In addition, the 70,000 industrial boilers in use range in size mostly from 10,000 pounds of steam per hour to 500,000 pounds. The cost of sulfur removed may range from $2,000 per ton to $6,000 per ton. Thus, the cost burden of sulfur removal may triple as the size of the industrial boiler decreases.

Under the percentage reduction provision, electric utility boilers of a size greater than 250 million Btu per hour must be equipped to reduce sulfur emissions by a determined percentage regardless of the sulfur content of the coal. EPA plans to extend these regulations to industrial boilers as well unless Congress acts to the contrary. This would essentially require all new industrial boilers to be equipped with extremely expensive flue gas desulfurization systems which cost about one-third as much as the total steamplant, or about the same as the boiler itself.

These requirements would unduly retard the necessary replacement of aging, inefficient boilers at a time when our energy objectives should be accelerated in this process.

NAM therefore believes that the percentage reduction requirements of the Clean Air Act should not be extended to industrial boilers. Rather, emission level standards should be set by using criteria which assure optimum costeffectiveness to the public.

The NAM believes that the Federal Government has a proper role to fulfill in setting realistic goals for industrial boiler emissions. However, the NAM strongly believes that any decision on the most cost-effective and appropriate means of achieving these goals should be made by the industry.

The NAM wishes to thank the members of this committee for the opportunity to present its views on the Clean Air Act in general, and specifically on the issue of percentage reduction.

Thank you, sir.

Senator **STAFFORD**. Thank you very much, Mr. Burns.

Being from northern New England, I particularly appreciate the fact that you have done it within 5 minutes.

Mr. **BURNS**. Thank you, sir.

Senator **STAFFORD**. Mr. Schwegmann, I hope I have not mispronounced your name.

Mr. **SCHWEGMANN**. That is perfectly correct, sir.

Senator **STAFFORD**. Thank you, and you are next.

STATEMENT OF J. C. SCHWEGMANN, MANAGER OF AIR SERVICES, KAISER ALUMINUM AND CHEMICAL CORP., ON BEHALF OF THE COUNCIL OF INDUSTRIAL BOILER OWNERS

Dr. **SCHWEGMANN**. Thank you, Mr. Chairman, Senator Randolph and Senator Humphrey.

I am Dr. Jack Schwegmann. I am manager of air services in the Corporate Environmental Affairs Department of Kaiser Aluminum and Chemical Corp. Kaiser Aluminum is a member of the Council of Industrial Boiler Owners [CIBO], and I am accompanied by Mr. William B. Marx, president of CIBO, and James P. Rathvon, CIBO's counsel.

CIBO is a broad-based association of industrial boiler operators and related equipment manufacturers, representing 16 major industries, independent of public utilities.

I will limit my comments to those provisions of the bill which would affect fuel use in industrial boilers, since CIBO's interests are limited to industrial generation of steam.

In brief, CIBO believes that today the Nation has neither the data nor the understanding to put in place an effective acidic deposition control program. Recent studies make it clear that today it is not possible to identify the specific change in the acid deposition patterns that would result from a given change in precursor emissions, nor to determine the specific importance of local source and long-range transport. As a consequence, CIBO states its belief that these uncertainties make it virtually impossible for Congress to legislate equitable and cost-effective solutions for the problem at the present time.

However, if the Congress feels it necessary to mandate statutory controls, CIBO urges that the most cost-effective solutions be implemented in the most equitable manner possible; that national energy and economic goals be protected; and that the long-term international competitive position of U.S. industry be safeguarded.

The need for cost-effective and equitable action is of vital concern to the industrial steam producer as well as to other fuel-burning and energy-using segments of industry. Severe and expensive controls which produce little environmental improvement in the so-called sensitive areas are likely to occur under the present legislative proposal. Widespread and stringent emission reductions without proper regard to source size and the relative role of nearby and remote sources will produce inequitable burdens on those sources whose impacts are already small.

The industrial boiler represents less than 10 percent of coal combustion, and the increase in coal use forecast for this group in 1995 is only 3 percent greater than at present, with correspondingly small increases is SO_2. Thus, control benefit will be small no matter how stringent the control requirements are on this group.

As to national energy and economic goals, the proposed legislation is likely to hamper industrial growth, slow or stop the move to coal as an industrial fuel, and retard the development of emerging control technologies.

The use of an emissions cap will be particularly harmful in that it will effectively preclude any increase in industrial use of coal as a fuel, severely limit existing fuel flexibility by restricting the capacity to manage fuel supply interruptions, impose additional control redundancy to an already complex system of NSPS, BACT, and LAER, and will set an artificial limit on productive capacity.

Further, a cap based on previous emission rates— a so-called rollback—would have the greatest adverse impact on the plants which have aided in the achievement of national energy goals to increase the use of coal as a fuel. The number of recently installed industrial boilers facing this requirement is large, over 200. They represent 11 basic industries located in 24 States in the long-range transport corridor.

The cap on past sulfur oxide emission rates also discriminates significantly against those regions which have little existing industrial development or which have traditionally burned natural gas with very low sulfur oxide emissions. These areas possess no controllable base of emissions from which to draw offsets and are therefore prevented from experiencing future economic growth.

The cap on oxides of nitrogen will also exacerbate the bias against coal use. The higher ratio of NO_x emissions over oil and gas—a ratio of 7:3:2—and the limited proven technology for NO_x controls will essentially prohibit the use of coal as a fuel. A control strategy for NO_x should be delayed until control technology is commercially demonstrated for industrial use.

With respect to section 182 relative to research and special studies, CIBO generally supports these provisions. We especially support the provisions of 182(e)(2) and 182(f). We believe that this study will demonstrate that many of the currently accepted premises are not correct and that the control program envisioned in this legislation is not cost effective or equitable.

CIBO also believes that the Congress should repeal the percentage reduction requirements in the 1977 amendments to the Clean Air Act as they apply to industrial boilers. This is not a cost-effective control for industrial boilers because scrubbers would produce only marginal air quality improvement and would increase the cost of coal use by increasing control equipment costs, increasing energy consumption by two to three times, and by increasing manpower requirements in the boiler room.

CIBO suggests that realistic and cost-effective controls are appropriate and should be implemented. However, percentage reduction would impose an unreasonable burden not only on the boiler owner but also on the consumer.

Mr. Chairman, this concludes my presentation. I will be happy to address any questions you may wish to ask.

Senator **STAFFORD**. Thank you very much, Mr. Schwegmann.

I am going to say that it is a pleasure to see the next witness here again, John Quarles, who was the Deputy Administrator of EPA and has a favorable reputation with this committee. We are glad to see you back here, John. You are next.

Senator **RANDOLPH**. May I interrupt?

Senator **STAFFORD**. Yes, you may indeed.

Senator **RANDOLPH**. I only want to say that I join you in that welcome. But, having begun a pattern here of Westvaco, 2,600 West Virginians employed, Kaiser Aluminum has approximately 2,400 workers on the job in West Virginia. Is that correct, doctor?

Dr. **SCHWEGMANN**. That is correct, sir, to date.

Senator **RANDOLPH**. Fine. Thank you.

Senator **STAFFORD**. Thank you, Senator.

Mr. **QUARLES**. Well, I want you to know, Senator Randolph, that my wife has some very good cousins who live in West Virginia.

Senator **RANDOLPH**. Second or third cousins?

Mr. **QUARLES**. My wife is in Virginia; we count them all.

Senator **STAFFORD**. John, you had better send some of your children to school in Vermont.

STATEMENT OF JOHN QUARLES, CHAIRMAN, NATIONAL ENVIRONMENTAL DEVELOPMENT ASSOCIATION, CLEAN AIR ACT PROJECT

Mr. **QUARLES**. Mr. Chairman and members of the committee, I am grateful for this opportunity to comment on proposed amendments to the Clean Air Act, focusing particularly on S. 768, the bill that is based upon the bill that was prepared by this committee during the 97th Congress.

I am conscious of a long list of other witnesses scheduled to testify today who also want to say a few words on this important subject, and I will try to comply strictly with your request that I limit my verbal presentation to 5 minutes.

My written presentation is 27 pages long. Five minutes is too short a period of time to read that statement or even fully to summarize it. Instead, I will simply mention a few highlights which I hope will stick in your memory when in due course you come to address these issues more substantively.

First, I will give you an overall reaction. I think it is accurate to say that the entire American business community as well as those major segments of the American labor movement which participate in NEDA/CAAP regard S. 768 as undesirable legislation.

In the view of NEDA/CAAP, the chief reason that S. 768 runs contrary to the public interest is its failure to provide any meaningful regulatory reform in those areas where the Clean Air Act's cumbersome and complicated requirements severely restrict business activity, and particularly industrial growth, without any meaningful benefits to clean air.

To comment briefly on the subject of acid rain, NEDA/CAAP is not a full participant in the overall national debate regarding proposed acid rain controls. We are concerned, however, that acid rain controls could have unintended adverse effects on the economy, as discussed in pages 19 to 25 of my prepared statement.

We are apprehensive that S. 768 could prevent companies from making full use of their existing industrial facilities. The bill would, in effect, create a 31-State nonattainment region, preventing industrial growth unless offsets could be found.

Also, if the acid rain control program is adopted, the whole purpose of sulfur dioxide PSD disappears, a fact not recognized by the bill. In fact, the entire task of integrating the acid rain control program with the rest of the Clean Air Act has not at all been carefully thought through, and that needs to be done before legislation is enacted.

I will ask to testify and address this in more specific times when the committee approaches those issues.

Other deficiencies in the bill occur throughout the provisions dealing with stationary sources under title I. S. 768 makes no improvement in the Clean Air Act's negative bias against new capital investment. On PSD, described by Senator Hart as the most complicated regulatory scheme ever devised, the bill would leave the law even more complicated than it now is.

On numerous other issues, similar results would occur. The reasons for these deficiencies in S. 768 may be attributed directly to the convulsive politics that rocked the environmental movement during the 97th Congress. The bill was designed to send a message to those who were perceived as trying to emasculate the important safeguards in the Clean Air Act. That message was sent; it was received; the bill accomplished its purpose.

The air has been cleared and conditions have returned to something approaching normal. But the bill itself would be a legislative misfortune.

In a certain respect, the Clean Air Act does require legislative reform. When the National Commission on Air Quality completed its report nearly 3 years ago, that need was well documented.

In an economy that is beset with inflation, high interest rates, foreign competition, plant closures, and persistent unemployment, it cannot serve the public interest to hold the Clean Air Act so sacrosanct that even burdensome requirements that make no meaningful contribution to clean air are zealously defended.

We are grateful that a passage of time will facilitate a fresh review of S. 768. The bill has never really been subjected to full legislative hearings, and we appreciate the quick bit of attention that these hearings have provided. We look forward to more.

When full hearings are given to the features of the bill, we are sure this committee will find a need for fundamental revision of many of its features. At that time, we hope to provide specific suggestions for its improvement.

I thank you for your consideration.

Senator STAFFORD. Thank you very much, John.

I got the general impression you disapprove of the bill.

Mr. QUARLES. But not of the act.

Senator STAFFORD. Gentlemen, in view of the constraints on our time and the long list of witnesses, we would like to reserve for the committee the right to submit questions in writing with respect to your testimony if that is agreeable, for your response at your early convenience. We still have something like 11 witnesses to go, or 10.

Senator Randolph?

Senator RANDOLPH. Well, I was just checking to see if we had any specific inquiries to make, Mr. Chairman. I want to cooperate with you.

Of course, we expect differences of opinion on the matter of the Clean Air Act and its amendments.

Senator STAFFORD. Certainly.

Senator RANDOLPH. I am trying, as you are trying, to give all parties and those that represent groups—you represent a group, is that correct, Mr. Quarles?

Mr. QUARLES. Yes, sir. NEDA/CAAP represents a large number of major national corporations and the building and construction trades unions of the AFL-CIO.

Senator RANDOLPH. Some labor unions, you say?

Mr. QUARLES. Yes.

Senator RANDOLPH. Spell that out just once more.

Mr. QUARLES. The building and construction trades department.

Senator RANDOLPH. Of the AFL-CIO?

Mr. QUARLES. Yes, that is right.

Senator RANDOLPH. How many groupings are there in your organization, or interests?

Mr. QUARLES. There are approximately 30 major national corporations in a diversity of fields—petroleum, chemicals, paper, railroads, et cetera—and the labor unions, which I believe represent 12 million members.

Senator RANDOLPH. I see.

We may have questions, Mr. Chairman.

How many witnesses have we today?

Senator STAFFORD. Thirteen.

Senator RANDOLPH. Thirteen. So perhaps it is best to provide written questions and even comments from us, and you comment on what we are saying.

Thank you very much.

Keep the West Virginians employed, will you?

Dr. SCHWEGMANN. We are trying, Senator.

Mr. BURNS. We will.

Senator RANDOLPH. I visited Westvaco this past Friday night and was there with the superintendent or mill manager, Mr. Emery, whom we have known for many years.

Mr. **Burns**. Yes.

Senator **Randolph**. He says that they have been able to keep the plant operating there without loss of employment. Is that correct?

Mr. **Burns**. Yes, sir, during this last recession.

Senator **Randolph**. That area is very greatly hit by unemployment, as we do know.

Mr. **Burns**. Yes.

Senator **Randolph**. This has nothing to do with today's subject, but while the chairman is talking a moment, do you know, in western Maryland, there is desolation. We have had plants close, like Celanese at Cumberland, which is just a few miles away from the West Virginia border. The plant is closed, not workers laid off. I am not sure of the exact number, but perhaps 2,000 workers were affected by that plant closing.

We move over to other plants that have closed in the area. We come now to Hagerstown, which is in the same general area, adjacent to West Virginia, and the companies like Fairchild and Mack Truck are gone.

It does show—and I am not trying to bring it into the picture today as an argument for or against certain clean air actions—but it does show that in this country where we think the economy is improving, that there are certain areas where it is not improving, and we have that in West Virginia. We have counties that have 30 and 35 percent unemployment.

It is not wrong for me, Mr. Chairman, to talk about this here today, when we seem to see the flickering, at least hopefully, of lights that bring greater employment, because it is not true in West Virginia with the types of industries that we have.

I am only mentioning it because those industries are, understandably, very concerned, to use the word rightly, with whatever is done in connection with improving clean air, especially acid rain, that we do it after the most careful consideration.

I am not one that will hold back—never have been—in these programs of strengthening the environment. The record proves that. In these matters, we may ask some time, a little time to adjust, perhaps, as I have indicated in the hearings, so that we can be a part of continuing the program of strengthening the clean air of this country for the workers not only in the plants but the citizenry, generally.

Thank you.

Mr. **Quarles**. Senator Randolph, if I could just mention very briefly, the national unemployment stands at 8.8 percent. That is 10 million or 11 million people, many more than just in West Virginia, and I appreciate your bringing that discussion into this discussion of the Clean Air Act. The Clean Air Act is not the cause of those unemployment problems. But there are opportunities to make minor modifications in the Clean Air Act that will restore a little more vitality to the economy and make it easier for companies to build additional facilities to create more jobs. That is, I think, the missing ingredient that we hope, Senator, will be injected into the bill before it is finally enacted.

Senator **Stafford**. Thank you very much. Thank you all for appearing with us today, and I think we will now have to go to the next panel.

We would ask Mr. William Megonnell of Edison Electric Institute and Mr. Rae Cronmiller, who is environmental counsel, National Rural Electric Cooperative Association, if they would come forward.

It would be the Chair's intent, unless you gentlemen have a different arrangement between yourselves, to go to Mr. Megonnell first and Mr. Cronmiller second.

So, Mr. Megonnell, you are on.

STATEMENT OF WILLIAM H. MEGONNELL, DIRECTOR, LEGISLATIVE AFFAIRS FOR ENVIRONMENT, EDISON ELECTRIC INSTITUTE

Mr. MEGONNELL. Thank you, Mr. Chairman, and I will try religiously to stick within your 5 minutes.

I am William Megonnell, the director of legislative affairs for environmental matters for Edison Electric Institute.

Most parties who are familiar with the Clean Air Act have concluded that it is extremely and unnecessarily complicated and inefficient in its operation. While great progress has been made in improved air quality under the act, the feeling is that the Nation could have obtained equivalent protection at lower cost or, conversely, better protection at the same cost, if the procedures were simplified and streamlined.

That, in essence, was the conclusion after several examinations by diverse parties, including the National Commission on Air Quality, which was created in the 1977 amendments which were crafted, in large part, by your committee.

Now, it is difficult for many observers to understand how the 114 pages of S. 768, when incorporated into the 190 pages of the current printed Clean Air Act, will simplify, streamline, fine tune or improve the already complicated procedures. On the contrary, it appears that procedures and requirements will become considerably more complicated.

Despite widespread criticism of the prevention of significant detioration provisions, for example, S. 768 leaves the burdensome requirements largely unchanged. In some respects, the process will be made more unwieldly with only minor, if any, resulting air quality improvement.

These matters were addressed in my written statement, and I will not dwell on them any more here.

S. 768 would significantly expand the geographic scope and potential source coverage of the visibility program by legitimizing EPA's extension of its presumed authority to regulate integral vistas, which were not mentioned, or possibly even thought of, when the 1977 amendments were being debated.

The visibility provisions adopted by the committee last year remain in S. 768 despite withdrawal of support by Senator Hart, the principal sponsor of such amendments. Apparently, Senator Hart reconsidered his position subsequent to the committee's action, based on more careful examination of the impact of integral vista legislation in the West, and we hope the committee will give the matter similar reconsideration.

Now, the electric utility industry, as you might expect, is most concerned about the acid deposition provisions of S. 768, which would drastically—and, we feel, prematurely—alter the Nation's acid rain policy. Many people do not seem to realize that the United States has an acid rain policy, but it does, and based on current knowledge, it is the soundest, most intelligent policy we could have today.

It was first articulated in August 1979 by former President Carter in his second environmental message. He acknowledged that the acid rain question is very complicated and not enough is known about it, and he created an Interagency Acid Precipitation Task Force to plan and coordinate a 10-year research program to study the phenomenon.

Later that year, Senator Moynihan of New York, a distinguished member of this committee, introduced legislation to formalize the former President's research proposal. Senator Moynihan stressed that the greatest need was to study the acid rain issue; else we could make a multibillion-dollar mistake.

In mid-1980 Congress in its wisdom passed title VII of the Energy Security Act establishing the task force and charging it with formulating a comprehensive 10-year national acid precipitation research program.

In other words, in 1980, Congress recognized that the acid rain question was very complex and that considerable research on causes and effects would be necessary to determine whether it is a problem that should and could be effectively resolved.

A few months later, despite acquisition of very little additional information, we suddenly had become much smarter, and various legislative proposals were introduced to solve the undefined problems. One of these solutions wound up as section 120 of S. 768. But nobody, not even the National Academy of Sciences in its most recent report, can predict with assurance that it will solve anything.

EEI continues to believe that until much more definitive information is developed to indicate that at least somewhat commensurate benefits would be achieved, it would be premature to saddle the Nation's electricity users—and that is everybody—with expenditures in the billions-of-dollars-per-year range by even the most conservative estimates.

In section 121 of S. 768 on interstate pollution, the word "welfare" would be redefined to include precipitation. That seemingly slight change effectively would authorize the development of an acid rain control program wholly apart from that which would be created by section 120.

Senator STAFFORD. Mr. Megonnell, could you summarize now?

Mr. MEGONNELL. I would be very happy to. I have two more lines, sir.

Senator STAFFORD. All right.

Mr. MEGONNELL. In several respects, the interstate pollution section would exceed authorities in the acid rain provision. Controls would not be limited to SO_2 in 31 States but could be imposed for emission of any substance at any location.

Thank you, Mr. Chairman.

Senator STAFFORD. Thank you very much.

Now we would be glad to hear from you, Mr. Cronmiller.

STATEMENT OF RAE CRONMILLER, ON BEHALF OF THE NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

Mr. **Cronmiller**. Good morning.

My name is Rae Cronmiller, environmental counsel for the National Rural Electric Cooperative Association [NRECA], located here in Washington, D.C.

NRECA represents over 1,000 nonprofit consumer-owned electric systems within the country. These systems deliver electric power to 25 million rural Americans in 2,600 counties of the total 3,100 counties within the United States.

Mr. Chairman, on behalf of NRECA, thank you for this opportunity of appearing before this committee to express our views on issues related to the Clean Air Act.

A copy of our complete testimony has already been filed for the record. In that testimony, we commented on a number of provisions in connection with S. 768 and the existing Clean Air Act. Some of our comments were favorable and others were not.

Presently, I will attempt to summarize our views on only two provisions in S. 768, provisions which we consider troublesome while providing little or no environmental benefit if incorporated into the Clean Air Act.

First, I comment on a most controversial provision of S. 768, section 120, which would add a new part E to the Clean Air Act, an acid precipitation or acidic deposition control program mandating an annual 8-million-ton SO_2 emissions reduction control program.

First, Mr. Chairman, we are extremely concerned, as rural electric cooperatives, about any pollution adversely affecting the public health or welfare, and this concern extends to pollution damage in our natural environment as well.

Also, we are not oblivious to contentions that sulfur dioxide, SO_2 emissions from manmade sources are causing serious problems in some areas.

We are, however, skeptical of blanket solutions for a problem which thus far cannot be scientifically defined, blanket solutions which would cost people in this country billions and billions of dollars.

To put this Nation on a rational, reasonable course toward alleviating worries about SO_2 environmental damage, Congress should immediately enact S. 454, which will accelerate ongoing study, and S. 1925, which would establish a national program for developing effective clean coal combustion techniques.

NRECA hereby goes on record as specifically endorsing and supporting these bills.

Regarding the proposed part E amendment to the Clean Air Act, presumably this emissions reduction scheme is based on two assumptions: one, that we know enough to invoke an intelligent and at least somewhat cost-effective scheme to substantially alleviate not only acidic deposition but also whatever problems it is causing to our lakes, forests, agricultural products, and manmade structures.

The second assumption is that currently this Nation has no energy or environmental policy which will lead to solutions of whatever problems exist. As Mr. Megonnell has just testified, this Nation does have a policy toward identifying the problems relating to acidic deposition and recommending solutions to solve such problems.

Further, several other programs are also under way for the same purpose, finding a solution to and scientifically identifying whatever problems exist. Among these are the extensive projects of the Electric Power Research Institute [EPRI], of which the cooperatives are members, as are a vast number of other electric utilities throughout the country.

Now that intense research has been under way for several years, the question is, do we have sufficient knowledge to enact a rational scheme to solve or substantially alleviate the problem? Stated differently, can we presume the scientific research thus far conducted on acidic deposition has given us solutions to whatever problems exist?

Stated another way, can we presume the purpose of the 10-year national program enacted by Congress has been fulfilled? To honestly answer these questions, we need only to review the conclusions of the scientific studies thus far completed, which are the conclusions thus far reached by the interagency task force.

In the 1982 report, the latest report of that task force, on the status of the national program, stated the environmental effects of acidic deposition are largely unknown, and concluded, and I quote, "Current data and available methods, however, are not sufficient to quantify relationships between pollutant emissions and acid deposition on a regional scale, or under varying conditions Nor is it yet possible to identify the specific change in acid deposition patterns that would result from a given change in precursor emissions."

Specifically, the electric cooperatives are extremely concerned about the cost of this experimental program. The cooperatives, which own and operate approximately 20 percent of the existing flue gas desulfurization units for coal-fired powerplants existing in this country, while producing about 6 percent of this Nation's coal-fired electric generation, would incur direct expenditures in the billions of dollars in complying with this program.

To be sure, the position of NRECA is not that reductions in manmade pollutants—and, in particular, SO_2 and oxides of nitrogen—will not be necessary. But presently, any scheme of emissions reduction amounts to nothing more than a grand experiment.

Further, when scientific research reveals solutions to whatever problems exist, the cooperatives would be among the first to respond if they are related in any way to the problem.

In short, in view of the absolute uncertainty regarding any beneficial results and the vast costs involved in this experiment, we recommend eliminating the acidic deposition control scheme, part E, as would amend the Clean Air Act, from S. 768.

Alternatively, if this Congress is intent on enacting such a multibillion-dollar experiment, 100 percent financing for the scheme should come from the Federal Government.

Last, regarding proposed section 121 of S. 768, which would require amendment of SIP's, State implementation plans, regarding interstate pollutants, this section would amend the State implementation plan program to require that the State account for any pollutants in air which may reasonably be anticipated to cause or contribute to an adverse effect on public health or welfare or the environment in any other State.

This proposal is obviously aimed at preventing interstate pollution, a problem which the Clean Air Act properly needs to address.

Senator **Stafford**. Are you nearly through, Mr. Cronmiller?

Mr. **Cronmiller**. Almost, yes.

We think the provisions in this section are very vague and do not quantify the extent of pollutant emissions over State boundaries which should be controlled. Therefore, to give this proposal more meaning, the words "substantially contribute to" or words to that effect should be added in lieu of the words "contribute to" in section 121 as would amend the Clean Air Act.

This concludes my summary. Once again, thank you.

Senator **Stafford**. All right. Thank you both very much, indeed.

In view of the situation, any questions the Chair has will be submitted to you in writing for your response, if that is agreeable, and I will reserve that right for all members of the committee.

Senator **Stafford**. Senator Randolph, do you have any questions?

Senator **Randolph**. Thank you very much. I agree that we can proceed that way with the witnesses.

I know that this is not important, but I want it on the record at this point.

Mr. Cronmiller, you mentioned the Rural Electrification Act. Is that correct?

Mr. **Cronmiller**. Yes, Senator.

Senator **Randolph**. When did that pass the Congress?

Mr. **Cronmiller**. Oh, it has been in effect for—I believe the 50th anniversary is coming up in 1986 or 1985.

Senator **Randolph**. Well, I want the record not to forget that I was here.

I was one of the authors of the act. I supported it very, very much. We might even put in a few of the figures to indicate how the farms of this country had no electricity and what has taken place in the intervening years.

I do want the record to show at this time that still in the United States the biggest business is farming. We must not forget it.

Thank you.

Senator **Stafford**. Thank you, Senator.

Mr. **Megonnell**. Also, Senator, it is the biggest user of electricity.

Senator **Stafford**. Pardon me?

Mr. **Megonnell**. Agriculture is the biggest user of electricity, too.

Senator **Stafford**. Fine. Thank you.

Senator **Randolph**. The doctor heals, the lawyer pleads, the miner follows precious leads; but this or that, whate'er befall, the farmer, he feeds them all.

Right?

That is good poetry. I will sell it sometime.

[Mr. Cronmiller supplied the following additional information:]

NRECA NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION
1800 Massachusetts Avenue, N.W.
Washington, D.C. 20036/202-857-9500

December 23, 1983

Honorable Robert T. Stafford
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

Dear Senator Stafford:

This is in response to Senator Randolph's request that the record be supplemented regarding electrification of the United States agricultural community since the passage of the Rural Electrification Act. We can be proud of the history surrounding the Act and the Rural Electrification Administration (REA) in the Department of Agriculture. The year 1986 will mark a half century of achievement that the Act set in motion, a fifty-year success story worthwhile recounting.

Before the Act, only about 10 percent of America's farms and ranches had access to central station electricity. The absence of electric service, taken for granted for generations in the cities, made farm life a never-ending round of chores for the farmer, his wife and children. In the absence of refrigeration, ice hewn from the lake in the winter was stored for summer use, but much food spoiled. There was always wood to chop, water to haul. Work at night was by kerosene lamp, and tools were sharpened by hand. Life was hard without electricity.

Since REA, though, over 99 percent of the nation's farms have been electrified. And partly as a result, today's farmers are the most efficient and productive in the world. Today, one of our farmers feeds more than 75 people, and they are nearly 15 times more productive than they were before REA came along in 1935.

The passage of the REA bill in 1936 -- and Senator Randolph from West Virginia is the sole remaining member of the Congress who was present to vote for that bill -- initiated a remarkable turnaround in rural life, not only by making farms and farmers more productive, but by providing rural residents with those amenities we take so much for granted today. REA allowed rural people an opportunity to begin to enjoy a quality of life comparable to their urban neighbors.

The job facing rural electric cooperatives is still a challenge. As rural America and the demand for electricity continue to grow, even more power generating facilities and electric transmission/distribution lines will be required. Since the cooperative systems will continue to operate in the nation's most thinly populated and difficult to serve areas, the Act, the primary financing for them, remains an absolute necessity. Additionally, ever changing factors influencing the financing of construction activities mandate the need for changes in the REA lending policies and procedures. In short, the REA program has done much to improve the quality of life in rural America, but much more needs to be done.

Thank you for this opportunity to espouse the accomplishments and goals of the REA program.

Sincerely yours,

Rae E. Cronmiller
Environmental Counsel
Energy and Environmental
Policy Department

REC:ajl

Senator **Stafford**. Senator Baucus, do you have any questions?

Senator **Baucus**. No questions. Thank you, Mr. Chairman.

Senator **Stafford**. All right.

In that case, gentlemen, we thank you very much, indeed.

I think the Chair recalls that George Aiken may have had some part in the early days of REA, also.

Senator **Randolph**. That is correct. He certainly did. Is he living now?

Senator **Stafford**. Yes, he is. He is still in fairly good health.

Senator **Randolph**. Fine. Thank you.

Senator **Stafford**. The next panel will be Mr. Richard Kreutzen, the general manager, environmental affairs, of Chevron, U.S.A., representing the American Petroleum Institute; and Mr. Paul Schmechel, chairman, Montana Power Co., representing the Western Regional Council.

Gentlemen, we know we are pressed for time, and we apologize for that. We will take you in the order I have announced. Mr. Kreutzen, that means you are on first.

STATEMENT OF RICHARD W. KREUTZEN, GENERAL MANAGER, ENVIRONMENTAL AFFAIRS, CHEVRON, U.S.A., ON BEHALF OF THE AMERICAN PETROLEUM INSTITUTE, ACCOMPANIED BY MIKE BARR, ESQUIRE, PILLSBURY, MADISON, AND SUTRO

Mr. **Kreutzen**. Senator Stafford, Senators, as I was introduced, I am Dick Kreutzen of Chevron, U.S.A., and I am here today presenting the API's views on Senate bill 768.

With me is Mike Barr, an attorney specializing in air matters, with the San Francisco law firm of Pillsbury, Madison, and Sutro.

In view of the 5-minute time limitation, our testimony today is going to focus on just four areas of the bill that we consider would raise new barriers to energy facility siting and permitting.

The first of these barriers would be the bill's codification of the proposed integral vista regulations. The bill would create a new permit procedure to protect these vistas and would therefore subject energy and other projects within the vistas to yet another administrative action and further judicial review.

As you can see on our map of Wyoming and Idaho, or parts of Wyoming and Idaho, the integral vista from the summit of the Grand Tetons extends up to 90 miles and encompasses an area many times larger than the park itself.

This vista would impose one more administrative determination on and encourage further litigation against projects in both of these States.

The Grand Teton example shows how the bill fails to address integral vista problems, multi-State integral vista problems; for example, which Governor opts out?

Our second map shows the integral vista from the top of Mount Whitney in California. As before, the vista vastly exceeds the size of the park, extending out 200 miles from the park, in fact covering a large percentage of the State of California. This vista would restrict California heavy oil production in Kern County, including the Elk Hills Petroleum Reserve.

We also object to creating a new PSD area classification scheme, regardless of whether it is opt in or opt out. The bill would confront new energy projects with a host of new, possibly conflicting, and certainly unpredictable State area classification systems. It has the potential to be a classic case of paralysis by analysis.

In addition, we simply do not believe a new area classification program will work. Such schemes have been attempted several times before, and they have uniformly failed.

We have similar doubts about the interstate pollution provisions which impose new permit requirements. These provisions would apparently be enacted in order to somehow protect downwind States and foreign countries from some vague environmental threat caused by some unknown and unquantified atmospheric transformation, conversion, or combination. Such wide-open provisions have little or no scientific value, and they have no limits. They would effectively become substitute acid rain, hazardous air pollutant, PSD, and other programs.

They would also grant Clean Air Act enforcement powers to individuals, downwind States, and foreign countries. In particular, the bill would grant to individuals the power to enforce against sources in other States unrealistic goals in their long-term PSD classification plan and would also grant to foreign governments a unilateral power to object to new U.S. energy projects without any reciprocity.

Finally, by retaining the construction ban in nonattainment areas, the bill would stifle the addition of new refinery capacity in Los Angeles to process significant new OCS crude reserves. Combined with adding a vague dual source definition which we have found does not work, the ban would prohibit construction of refinery modifications which reduce air emissions overall.

The current bill also does not fix major problems with the current offset policy. Offsets are not available when RACT, BACT, NSPS, and LAER have been repeatedly applied to sources such as Los Angeles refineries and those in other areas.

In conclusion, we are disappointed by S. 768. When we recommended Clean Air Act amendments in 1980 and 1981, we did not recommend nor support any weakening of the basic goals of the act. Our aim was to streamline it, especially the parts concerning permits for new energy projects.

Ironically, this bill would create new obstacles to energy projects just when we are approaching attainment of the act's goals. Despite claims that 150 million people still live in nonattainment areas, levels of air pollutants have decreased very substantially in terms of numbers of people exposed, numbers of times exposed, and hours of exposure. This dramatic reduction in exposure of the public to air pollutants has cost our industry and other industries great amounts of capital and manpower.

The petroleum industry alone spent over $15 billion on air pollution controls from 1973 to 1982. Yet this committee's current bill fails to even acknowledge this progress and instead would further stifle American energy development.

Thank you.

Senator STAFFORD. Thank you very much, Mr. Kreutzen.

Senator BAUCUS. Mr. Chairman.

Senator **Stafford**. Senator Baucus.

Senator **Baucus**. Mr. Chairman, with the chairman's indulgence, I would like to introduce our next witness, Mr. Schmechel, from my State of Montana.

Senator **Stafford**. Why, of course. We would be delighted to have you do so.

Senator **Baucus**. Mr. Chairman, I take this opportunity because I would like the chairman and the committee and also the witness to know how proud this Senator is, and we in the State of Montana are, of Mr. Paul Schmechel and the Montana Power Co.

I can say without reservation that Mr. Schmechel is a leader in showing to the country that there are ways to generate power and also conform to high environmental standards.

Mr. Chairman, the Montana Power Co. is part of a consortium of utilities which have constructed Colstrip I and II in the State of Montana. Colstrip I and II are meeting the air emissions standards of 0.3 pound per million Btu of sulfur dioxide emissions, which is far, far above the national standard of 1.2 pounds per million Btu.

More important, Colstrip III, and IV, which are costing about $1.4 billion, are incurring environmental costs of about $500 million and will have an emission SO_2 standard of 0.07 pound per million Btu. That comes out to, I think, around 13 mils per kilowatt, which is far, far above the amount set forth in the bill by Congressman Waxman, to be at one mil national tax.

The point I am making, Mr. Chairman, is that the Montana Power Co. in the State of Montana and the other associated utilities are going far beyond the standards set forth in the Clean Air Act and are meeting class I standards. We in Montana are paying for it because we want to be good citizens.

I want to tell you, Mr. Chairman, and particularly you, Paul, that you have been a real leader here, and we are all very, very proud of that, and of you, too, Paul.

Senator **Stafford**. Thank you very much, Senator Baucus.

It just occurred to the Senator from Vermont that if we move the air directly from your State to mine, we would be in good shape at both ends.

We will be very glad to hear from you, Mr. Schmechel.

STATEMENT OF W. P. SCHMECHEL, PRESIDENT AND CHIEF EXECUTIVE OFFICER, THE MONTANA POWER CO., ON BEHALF OF THE WESTERN REGIONAL COUNCIL

Mr. **Schmechel**. Thank you very much, Senator Baucus. Those are very, very kind words, and perhaps I should conclude my statement right now.

Mr. Chairman, members of your committee staff, I appear today on behalf of the Western Regional Council, and that council is a coalition of 46 major companies active in the eight Rocky Mountain States.

Its membership consists of utility companies like my own, coal producers, oil and gas exploration and production companies, financial institutions, copper and other hardrock mining firms, railroads, and a number of other types of businesses.

I do thank you for the opportunity to appear before this committee to express our views on S. 768.

I have submitted a full statement and ask that it be incorporated into the record.

Senator **Stafford**. It will be.

Mr. **Schmechel**. And I would like to amplify on just two or three parts of the legislation because we feel that some parts of it, as well as the present Clean Air Act, can affect many of us in the West to an unusual degree.

As business people who call the West home and make our living there, we support the intent of the Clean Air Act and what it can mean for the Western quality of life.

There are some provisions that would come out of the proposed legislation and that exist in the Clean Air Act that we are a little troubled with, and I will just touch on those.

The first is the visibility issue, and this single issue can have a very, very severe impact in the West. I would like to point out that the West has 120 of the total 188 proposed National Park Service integral vista areas. Basically, we oppose the integral vista concept. It is not part of the Clean Air Act, and it would extend Federal jurisdiction far outside the boundaries of class I areas. It would frustrate State, local, and private land use and could very well strip State and local governments of their roles in siting decisions in a number of cases.

The bill adopts the integral vista concept developed by the Environmental Protection Agency under regulatory process. It would place in statute the 188 vista areas associated with 48 national parks which were identified on a preliminary basis for comment in 1981.

Some of the individual vistas are far larger than the parks in which they originate and cover huge expanses of State and privately owned lands. Just as one example, and I will reach outside my own State, in the State of Utah, it is possible that one-third of the entire State could fall under the integral vista concept, and its application largely would then be at the discretion of the National Park Service.

By unfortunate coincidence, that large portion of Utah contains sizable coal, tar sand, oil shale, as well as oil and gas resources. We think that matter should be left to the States themselves.

I would like also to touch on section 121 of the legislation, and that has to do with interstate pollution. The Western Regional Council opposes the interstate pollution amendments now contained in the bill.

The proposed citizen suit amendments would transform the present narrow and precisely defined system of appeal, where the EPA acts as a mediator, into one that would be largely open-ended. Under the existing arrangement, one State must take action against another State if there is evidence of interstate pollution.

Under the proposed amendment, however, any citizen could take action against any alleged source or group of sources on interstate pollution through the Federal District Court, and we think that would enable action to be taken even though there are specific air quality standards and criteria in place. If the standards are not adequate, then they should be changed, rather than opening a parallel door of control into the courts.

The final item I would talk about has to do with the acid rain section of the bill, section 120. This is particularly a sensitive issue in our part of the country for reasons that are wholly different, Mr. Chairman, than they are in your part of the country. A number of factors contribute to that difference.

First, there are fewer major emission sources in the West, and they are very widely distributed geographically.

Second, most existing Western sources already are subject to the Nation's most stringent emission limitations. As Senator Baucus pointed out, my own company has gone to great lengths to incorporate air quality control features on its plants, and many other Western utilities have gone to the same extent.

Last, the drier climate of the West results in less acid formation in the atmosphere.

S. 768 does not mandate technological controls, and we agree with that approach. Economic and geographic considerations must be weighed in the solution of acid rain problems where they are found to exist.

Further, the bill would have the source—that is, the operation responsible for the emissions—pay the cost. Again, we agree. A facility which has to pay that cost is going to decide how to achieve the reductions in the most cost-effective manner and in a way that makes sense for the plant's location and its anticipated economic life.

Thank you very much.

Senator **Stafford**. Thank you very much, sir.

We appreciate your taking the time and trouble to come here and advise and counsel with us. In fact, we thank the whole panel.

We will, again, place your full statements in the record, and we may have questions in writing if that is agreeable, gentlemen, for your response at your early convenience.

Senator **Stafford**. Do you have any questions, Senator Baucus?

Senator **Baucus**. No, thank you, Mr. Chairman.

Senator **Stafford**. In that event, gentlemen, thank you very much, and we will move on to the next panel.

The next panel will consist of Mr. Steven Knappenberger, president and general manager, Scottsdale Porsche and Audi, Inc., Scottsdale, Ariz.; Mr. Allen Hardy, president, Automobile Importers Compliance Association; Mr. Paul Haluza, director of government relations and public affairs, Motor Equipment Manufacturers Association; and Mr. Donald Randall, Automotive Service Councils, Inc.

Gentlemen, we welcome you here. We would propose to go in the order in which I have called your names if that is agreeable, and that means, Mr. Knappenberger, that you are on first, and we are going to have to hold you to 5 minutes.

STATEMENT OF STEVEN KNAPPENBERGER, PRESIDENT AND GENERAL MANAGER, SCOTTSDALE PORSCHE AND AUDI, LTD.

Mr. **Knappenberger**. Thank you, Mr. Chairman.

My name is Steven Knappenberger, and I represent Scottsdale Porsche-Audi as its majority shareholder and general manager.

As a small business, my company presently employs 43 people, and we have an annual sales volume of approximately $12 million per year.

Senator **Stafford**. Excuse me just a moment, Mr. Knappenberger.

I would ask our guests to please be as quiet a possible if you are leaving the room so that the committee and the rest of us can hear the witnesses.

Go ahead.

Mr. **Knappenberger**. As a small business, my company presently employs 43 people, and we have an annual sales volume of about $12 million per year.

I am pleased to have the opportunity of addressing this respected committee concerning section 206(a) of S. 768. Under the present provisions of the Clean Air Act, it is possible for persons to buy automobiles in Europe which do not have sufficient emissions controls and/or safety equipment to qualify for a certificate of conformity under the laws and regulations of the United States. These vehicles may now enter the United States under bond for professional modification to insure compliance with all U.S. emission and safety standards.

As a factory-authorized Porsche-Audi dealer, my company is franchised to sell designated new car models and, of course, provide service and parts for our customers.

As an enthusiast of the Porsche and Mercedes-Benz marques, I recognized the opportunity almost 2 years ago of filling the void of a market niche for several car models not normally offered in the United States by the manufacturers' importers. These models are all expensive cars representing the top of the line models for Porsche and Mercedes-Benz in Europe.

My company buys these cars from new car dealers in Europe, and the cars are then air-freighted to Los Angeles, Calif. Upon entry into the United States a bond is posted with U.S. Customs to insure that each car is brought into compliance with all U.S. safety and emission standards. Our cars are then trucked to a service shop in San Diego that specializes in professionally modifying each car to insure proper compliance.

Following the physical work performed, each car is taken to an independent emissions test laboratory approved by the Environmental Protection Agency, where it undergoes extensive testing. Following successful testing, notarized test results are sent to the EPA, and similar documentation is sent to the Department of Transportation for its review and approval. Upon their approval, these agencies instruct U.S. Customs to release bond for the given car.

As currently proposed, section 206(a) of S. 768 would enable only the original manufacturer to bring any of their vehicles into compliance with U.S. standards. As such, this would eliminate my company's ability to continue our present business of offering special model cars to our customers.

To provide proper perspective of the very small volume of cars involved, I should note that we presently import only about 20 of such cars each year compared to the approximate 350 other new Porsche and Audi cars we sell.

Nationally, it has been estimated that about 3,000 or fewer such models are imported each year in the United States. Despite the relatively small volume of cars we import, this area of our business represents a very significant contribution to my company's profitability, market image, and its ability to maintain its present level of employees.

I am currently a member of the National Dealer Advisory Council for Porsche-Audi, and I understand that Volkswagen of America, my franchisor, and Mercedes-Benz of North America are both lobbying aggressively for the passage of section 206(a). Unfortunately, as a small businessman, I do not have the resources to counter the lobbying efforts of these very large corporations effectively.

In sum, I strongly suggest that section 206(a) of S. 768 be stricken or amended to allow responsible small businessmen such as myself and other similarly situated individuals to continue to be able to import and properly modify cars for U.S. compliance.

Moreover, I would be very willing to endorse an amendment to the Clean Air Act which would further insure proper compliance of these cars through additional certification or registration of the importer and/or of the persons performing the required conversion for U.S. compliance if this committee feels that such additional assurance that the environment is properly protected is necessary.

It should be noted, as an importer of special model cars, my company provides each customer with a comprehensive limited warranty covering each car for 2 years through a division of the Borg-Warner Co. My company also maintains the ability to properly and professionally service and provide parts for all the cars we import.

I can see no reason why the proposed section 206(a) is necessary. The minuscule number of cars involved cannot be more than a minor irritant to the manufacturers, one they can end by making more models of cars available for importation. It seems to me that the only effect of the proposed section is to harm small businessmen such as myself and to deprive the American consumer of a larger selection of cars than he now has available.

I thank the chairman and the members of this committee for listening to me. Again, I ask that the proposed section 206(a) be stricken or modified as I have suggested.

Senator STAFFORD. Thank you very much, Mr. Knappenberger.

As a Porsche-Audi dealer, you remind me that recently I saw a story in one of our national magazines that described a community on Long Island as a home of beautiful people, all of whom drove either Porsches or Ferraris. And somebody living there indignantly replied that that was not so, that nobody drove Porsches or Ferraris; they all drove Mercedes or Audis.

That will not come out of anybody's time.

Mr. Hardy, you are next.

STATEMENT OF ALLEN HARDY, AUTOMOBILE IMPORTERS COMPLIANCE ASSOCIATION

Mr. HARDY. Thank you, Senator Stafford.

I am here on behalf of the Automobile Importers Compliance Association, and I would like to begin by saying that the prepared statement which has already been submitted runs a little longer than 5 minutes, so I am going to abbreviate it to try to stay within the time limit, but I will refer in a couple of instances to some more detailed information that is contained in the slightly longer statement.

The Automobile Importers Compliance Association is a trade association consisting of 35 businesses engaged in the importing, modification, testing, and selling of vehicles. The association was originally conceived for the purpose of opposing efforts to legislate these businesses out of existence by amendments to the Clean Air Act.

Such an amendment, known as the grey market amendment, was passed by this committee last year during a markup session without first being discussed in an open hearing. From the discussion during markup, it appears that the vote was based on the conclusion that the Clean Air Act requirements for commercial importers are less stringent than those applicable to original manufacturers. That is not necessarily the case.

Commercial importers bring vehicles into the United States by one of two methods permitted under the existing Clean Air Act and EPA regulations. First, under section 203 of the act, a noncomplying vehicle may be imported under bond and, pending compliance demonstration, the vehicle may be tested, modified according to the full Federal test procedure, and once it passes the Clean Air Act standards, the bond is released and the vehicle may be sold.

The second of the two possible methods of importing these cars allows a commercial importer to obtain certification under section 206, the small volume manufacturer provision of the act. Under small volume certification, the importer must demonstrate compliance with the applicable Clean Air Act standards by testing his vehicle, again using the full Federal test procedure.

However, compliance is determined by passing the Federal standards as discounted by assigned deterioration factors which are determined by EPA. The small volume provision was included in the 1977 Clean Air Act amendments as a means of permitting certification by small businesses without the excessive costs of durability testing of the normal EPA certification program.

In order to respond to the challenge posed by the grey market amendment, I would first like to explain what the amendment does. The amendment changes sections 203 and 206 of the act. Section 203 is amended by deleting the provision which permits the importation pending compliance demonstration by any person other than the original manufacturer, and it permits the importation of vehicles 5 years or older without any compliance requirement.

Section 206 is amended by preventing small volume manufacturer certification by persons who are currently classified as manufacturers under the act by virtue of their import activity.

We believe the grey market amendment will have two certain effects: First, it will reduce competition and thus increase prices and reduce choices for American buyers. Second, it will put over 200 small businesses out of business and, in effect, export the jobs.

At present, many American dealers—that is, car dealers—are selling European import cars for roughly twice what the same cars cost overseas. Therefore, the strength of the dollar has created some potential savings for American buyers through the commercial import option. These savings are illustrated on page 3 of our written statement.

If passed, the grey market amendment will eliminate these savings while also hurting many small businesses which, like mine, employ people using and developing clean air technology.

The question has been raised whether commercial imports have a negative impact on air quality. In my opinion, they do not. The current testing requirements to demonstrate compliance of these cars are so costly that compliance modifiers substantially overdesign the emissions systems, because each and every one of these cars must be tested according to the full Federal test procedure, which is very expensive, unlike the large manufacturers' models, which are typically spot-tested and not each of which is required to pass that test.

The types of emission controls used are of proven durability, and some typical controls are described on pages 3 and 4 of our statement.

AICA is aware that some persons in the commercial import business may not be meeting the Federal requirements. That is not unusual in a regulated industry. EPA has taken action to investigate reported instances of improper compliance activity, and AICA supports EPA's efforts. If one importer is cutting corners, it taints the entire business, and AICA would like to see appropriate enforcement where necessary.

Senator **Stafford**. Can you summarize now? Your 5 minutes have expired.

Mr. **Hardy**. Yes.

In summary, we hope we can work with this committee, in particular with Senator Randolph, to develop an amendment that accommodates any clean air concerns but preserves the rights of small businesses to compete as well.

Thank you.

Senator **Stafford**. Thank you very much.

Mr. Haluza, you are next.

STATEMENT OF PAUL T. HALUZA, DIRECTOR, GOVERNMENT RELATIONS AND PUBLIC AFFAIRS, THE MOTOR AND EQUIPMENT MANUFACTURERS ASSOCIATION

Mr. **Haluza**. Good morning, Mr. Chairman.

My name is Paul Haluza, and I am director of Government relations and public affairs for the Motor and Equipment Manufacturers Association, also known as MEMA.

In respect to time, I will skip over the first page commercial and ask that the statement be made a part of the record.

In the brief time allotted, let me try to sketch out our concerns, and by this I mean the automotive aftermarket, with some new ideas for this committee to consider.

Under emission warranties, since enactment in 1970, MEMA, along with every other major segment of the aftermarket, has argued over the merits of the emission warranties contained in the act. Even with the changes made in 1977, we continue to hold that mandated warranties are unnecessary and redundant to other enforcement authority already in the act.

MEMA supports all efforts toward maintaining healthy air quality. However, there is absolutely no quantifiable evidence that emission warranties have been or are contributing to cleaner cars on the streets. In fact, the former chairwoman of the California Air Resources Board, Mary Nichols, is on record stating, "I think warranties have, at least until now, not proven to be the way of getting the manufacturers to provide cars that actually meet emissions over a long period of time in customer service." To this conclusion she added, "The question is, Where do we go from here?"

We should all listen carefully to this conclusion from someone with impeccable environmental credentials, who headed a State board that has implemented environmental controls with an intensity that cannot be questioned.

In the real world we cannot, at reasonable price and without economic dislocation, legislate technology to assure lifelong durability and performance of a sophisticated mechanical product that contains over 15,000 parts, of which more than 7,000 are moving when the vehicle is in operation.

As a country, we need to be much more concerned about assuring that the vehicle will be properly maintained during its lifetime. It is totally unrealistic to expect the vehicle to perform flawlessly without periodic maintenance.

The presale durability certification requirements on vehicle manufactures, along with the need to improve fuel economy, have created a whole new generation of high technology under the hood of the car. Maintenance of this technology is more important today than it was years ago. However, the new technology and length of mandated warranties have led the motoring public in a false sense of security that the vehicle's service parts need little or no attention.

We are beginning to see evidence that owners are paying less attention to periodic maintenance and, in general, waiting for their cars to literally stop before having routine service repairs made. This is not the way to assuring mobile source air quality. Uniform periodic inspection and maintenance, on the other hand, can help.

We are trying to say that Congress must come to grips with placing the responsibility for vehicle maintenance where it belongs, on the vehicle owner, and vehicle owners must be given the incentive to developing proper maintenance habits.

As an example, I would call your attention to the FAA requirement for annual inspection of all private planes, during which the owner must document that prescribed maintenance has been performed. If the plane passes, it is issued a certificate allowing it to fly for another year. Further, compliance is the responsibility of the owner, not the manufacturer. These same standards could easily be adapted for motor vehicles.

Given the highly publicized polls of recent years reflecting an overwhelming majority—85 percent, according to the Harris poll—favor strict laws to keep air clean, I would think that placing vehicle performance responsibility on the owner would be viewed as shared responsibility if the public is sincere about clean air.

In summary, we are trying to say there is enough evidence to support elimination of the mandatory emission warranties entirely and let the manufacturer's new car commercial warranty adjust the production and in-use performance capabilities of the vehicle's emission system, just as they now do for safety items such as brakes and lights.

However, we do not suggest total elimination. We do suggest retrenchment to a level no greater than 2 years or 24,000 miles, a level which will catch any manufacturing defects that have occurred and thereby fully protect the car owner.

It is important to note that this proposal would not affect either the 5-year/50,000 mile certification or EPA's recall authority under section 207(c), which also extends for 5 years or 50,000 miles.

Under tampering, MEMA endorses the concept of S. 2023, a bill introduced by Senator Mitchell, a member of this committee, which would clearly make it illegal to manufacture and/or sell parts designed to defeat a vehicle's emission control system.

However, we also feel the tampering provisions of the act need to be changed to clarify the parts covered and to clearly permit mechanics to temporarily remove a part if necessary for routine maintenance and repairs.

Under State or California waivers, we continue to support the authority for California, which has unique environmental problems, to establish more stringent motor vehicle emission standards, together with appropriate presale procedures for meeting their standards.

I will be through in 1 second, sir.

But here again, we believe that any such authority should preclude that State from adopting warranty requirements longer than any Federal requirement.

Our argument would be the same as we discussed earlier. Defective cars should be repaired by the manufacturer. In-use performance should be the responsibility of the owner through proper maintenance.

We are disappointed that these points have not been addressed in S. 768.

I would like to thank the committee for allowing me to be here this morning, and I will be happy to answer any of your questions.

Senator **STAFFORD**. Thank you very much, Mr. Haluza.

Mr. Randall, I guess that gets us to you.

STATEMENT OF DONALD A. RANDALL, RANDALL, BANGERT AND PRICE, ON BEHALF OF AUTOMOTIVE SERVICE COUNCILS, INC.

Mr. **RANDALL**. Senator, I appreciate the opportunity to be here, and I am testifying on behalf of ASC, which is a 6,000-member unit.

Part of our views, we think, or nearly all of them, are represented and acceptable to the 320,000 independent repair shops throughout the country.

The committee has the opportunity to remove the provisions in the act which establish an unregulated monopoly under the hoods of millions of our motor vehicles and which will cost the motoring public over $1.7 billion additional annually to maintain and repair their vehicles.

Thirty-five million cars have been sold subject to the mandatory Federal emission control system warranty since 1980. Forty percent of those will be subject to I&M inspections, inspection and maintenance, and 40 percent of those that are inspected will fail. That means that 5.6 million cars with mandatory 5-year/50,000 mile warranties will artificially be directed back into franchised dealer shops for possible warranty work.

While captive in these dealerships, the owners will be sold additional nonwarrantied repairs by the trained, commission-paid service writers. The costs for these expected repairs will be about $5.796 billion at the dealers. The independents, had they not been artificially deprived of these sales opportunities, would have done equal or better work for $4.536 billion. That is $1.736 billion added cost to the motoring public, and that cost does not reflect the already built-in monopoly prices for the repairs under the mandatory Federal emission control warranty service contract.

We estimate that the up-front cost for these warranties on cars sold since 1980 is approximately $14 billion or $400 for each car. In short, the mandatory warranty creates a compulsory service contract relationship between car buyers and manufacturers. It ties the franchised car dealers into a price-fixed relationship with auto manufacturers and a compulsory service relationship with car owners.

It denies vehicle owners the chance to go into a free, competitive marketplace to purchase the needed repairs to their emissions systems. Instead, it permits the auto manufacturers to add to the price of their new vehicles any amount that they may elect to charge, and the law requires car buyers to pay for this mandatory service contract warranty.

The Clean Air Act creates a noncompetitive arrangement for repair of emissions systems which is not subject to the competitive disciplines of the aftermarket. Vehicle inspections, where required, can insure that our vehicles remain relatively pollution free. If a vehicle fails inspection, the owner should be free to go into a competitive market for needed repairs rather than be forced into a price-fixed monopoly arrangement.

Section 207(b) was originally drawn to protect car buyers from defects and to hold the feet of the car companies to the fire so that they would be forced to build quality and durability. However, this warranty is becoming an enormous economic burden and a massive disservice to the millions of car buyers who are forced to purchase these warranties.

We urge you to repeal section 207(b) and to modify 207(a) to require the car manufacturers to offer service contracts at an additional cost to be bought voluntarily by the purchaser of the car if they so choose, and that service contract should be honored anywhere. If you are going to require it by Federal law, you should not favor one group over another and create a windfall amounting to billions of dollars in change in the aftermarket into the dealerships.

Thank you, sir.

Senator **Stafford**. Thank you very much, Mr. Randall.

Gentlemen, as with the others, your full statements will appear in the record, and if members of the committee and its chairman have questions, we will submit them to you in writing, if that is agreeable, for your response at your early convenience.

Senator **Stafford**. Thank you very much for coming here.

At this point in the record, the Chair intends, assuming there is no objection, to place a letter from Philip A. Hutchinson, Jr., vice president, industry-government relations, of Volkswagen of America, to Senator Jennings Randolph, so that it may appear at this point in the record.

[The letter referred to follows:]

VOLKSWAGEN
OF AMERICA, INC.

475 L Enfant Plaza, S.W., Suite 2450
Washington, DC 20024
Tel 202/484-6096

November 16, 1983

Honorable Jennings Randolph
United States Senate
Washington, DC 20510

RE: Grey Market Imports

Dear Senator Randolph:

We continue to be concerned about the increasing number of automobiles that are imported into the United States that do not conform to U.S. safety and emissions requirements. This situation has been called to the attention of the Environmental Protection Agency, the National Highway Traffic Safety Administration and the Customs Service in an endeavor to stop cars that do not meet our laws from being sold in the U.S.

To prove our point, we recently acquired and tested a VW Beetle built in Mexico that was imported and supposedly modified by grey market operators to meet the requirements of the Clean Air and Traffic Safety Acts. These operators filed a report with the Environmental Protection Agency claiming that this car met the emission standards. In fact, this car failed all the emission requirements by a wide margin and many of the safety rules. We presented the vehicle and our findings to the regulatory agencies which confirmed our data. Your staff has also been fully apprised of these test results.

The existing loopholes which permit cars, that were not intended by the manufacturer to be sold in this market, to be imported and modified should be closed. Not only is the grey market practice unfair to legitimate manufacturers -- who must comply with the letter of the emission and safety laws, establish extensive facilities to service vehicles and honor warranties -- but it erodes our regulatory process by permitting glaring abuses such as those we have documented.

It should not be forgotten that we at Volkswagen of America are responsible for the emissions performance of our cars not only when they are new, but also if they fail emission standards in the field during their useful life. When in-use cars fail the standards, we -- together with our authorized dealer organization -- recall the cars and remedy any emission control system defect. We do not see how grey market

Porsche Audi Volkswagen

operators can fulfill that recall and remedy responsibility. Who will contact the owners? Who will repair the cars on a nationwide basis? Who will supply the parts? Who will pay for the recall?

Your leadership and interest in this matter is genuinely appreciated. We request that our views be made a part of the hearing record on proposed revisions to the Clean Air Act.

Sincerely yours,

Phil Hutchinson

Philip A. Hutchinson, Jr.
Vice President
Industry-Government Relations

PAH:fs

Senator **Stafford**. We will ask the last panel to please come forward: Mr. E. Neil Helmers, E. I. du Pont de Nemours, Inc., representing the Chemical Manufacturers Association; and Mr. John J. Contney, chairman of the Laundry Cleaning Council.

It would be the Chair's intent to go first with Mr. Neil Helmers unless, between yourselves, you have agreed on some other arrangement. So we will go, Mr. Helmers, with you.

STATEMENT OF E. NEIL HELMERS, MANAGER, AIR QUALITY, E. I. du PONT de NEMOURS, INC., ON BEHALF OF THE CHEMICAL MANUFACTURERS ASSOCIATION

Mr. **Helmers**. Mr. Chairman, I am Neil Helmers, manager for air quality for the DuPont Co.'s engineering department.

Since joining DuPont as an environmental engineer in 1950, I have devoted most of my career to environmental engineering, consulting, and management.

Today I am testifying for the Chemical Manufacturers Association, CMA, about section 112 of the Clean Air Act.

CMA believes that EPA should and does have authority to regulate hazardous air pollutants, and we support EPA regulation where necessary.

However, CMA believes that S. 768 could actually impede efforts to achieve an effective regulatory approach.

Responsible decisionmaking under section 112 requires three things: One, the best available scientific information; two, independent scientific peer review of how EPA evaluates that information; and, three, a clear mandate for risk management that will produce sensible regulatory decisions.

As EPA Administrator Ruckelshaus testified last week, the public deserves the assurance that important section 112 decisions are being made with a sound foundation. That foundation must include adequate information about toxic effects of substances, the extent of human exposure, probable health effects, and the availability of control technologies.

Because of this complexity, independent scientific peer review of EPA's interpretation of data must continue. A recent GAO report indicates that review of EPA's health assessment documents by the Science Advisory Board may have marginally delayed some EPA decisions. Nevertheless, GAO and Congressman Dingell, who requested the report, indicate that independent review is vital. We agree.

Also, EPA needs a clear mandate to manage risks responsibly. Mr. Ruckleshaus said it doesn't make sense * * * to regulate without considering the magnitude of the risks, the certainty with which the risks are established, any other adverse environmental consequences, and the economic, social, energy, and other impacts of controls to reduce risks further. We agree.

CMA believes S. 768 would limit the Administrator's access to sound scientific data and peer review and unduly restrict his ability to regulate hazardous air pollutants.

For example, proposed automatic listing would freeze regulatory priorities. This could result in regulation of numerous substances without adequate scientific evaluation and without any independent scientific peer review. S. 768 could require emission controls even though they are not needed to protect public health. This would waste public and private resources.

To improve section 112's effectiveness requires a change in the way the law is administered and how key provisions are interpreted. As Mr. Ruckleshaus points out, if ample margin of safety is interpreted to require zero risk, this provision would be unworkable for nonthreshold pollutants. It could have severe economic consequences, shut down some industrial plants, and continue to delay EPA decisions.

CMA believes section 112 should not be interpreted to require elimination of all risk without regard to consequences. Then the ample margin of safety provision can be applied sensibly and effectively.

S. 768 would require the ultimate in available control technology, even when the best evidence indicates that public health would not benefit. A more appropriate approach would be to require application of reasonable BACT to those source categories which have been found, in the words of the statute, to reasonably be anticipated to result in an increase in serious illness, and then to require more stringent controls where necessary to eliminate any residual risk of serious illness. But we do object to being required to apply more stringent controls simply because they are available.

In summary, while CMA supports a well designed program for regulating hazardous air pollutants, we believe S. 768 is not the answer.

Mr. Chairman, with your permission, we would like to submit an expanded statement for the record.

Senator **Stafford**. Without objection, it will be placed in the record.

Now, sir, Mr. Contney, we will turn to you.

STATEMENT OF JOHN J. CONTNEY, CHAIRMAN, LAUNDRY CLEANING COUNCIL, ACCOMPANIED BY WILLIAM E. FISHER, MEMBER, ENVIRONMENTAL TASK FORCE

Mr. **Contney**. Thank you, Mr. Chairman, and thank you for the opportunity of being here.

My name is John Contney, and I am chairman of the Laundry Cleaning Council, on whose behalf I am testifying, and with me today is Mr. William E. Fisher, a member of the LCC's environmental task force.

LCC welcomes this opportunity to present its views on the proposed amendments to the Clean Air Act contained in S. 768.

With your permission, Mr. Chairman, I would like to enter my written testimony in the record and then briefly summarize it.

Senator **Stafford**. That will be done.

Mr. **Contney**. Thank you.

LCC represents six national trade associations with many small business members in the drycleaning and laundry industry.

The LCC and the entire drycleaning industry share your concern about the health and welfare of the general public. Indeed, our concerns and those of our members are particularly acute because our members employ perchlorethylene, or perc, a substance whose use would likely be affected by S. 768.

We are concerned because S. 768 would require automatic listing of perc if EPA does not find in a timely fashion that it is not hazardous.

We are concerned since approximately 85 percent of the drycleaning operations in the United States use perc as a cleaning solvent. Since drycleaning systems can only use the specific solvent for which they were designed, operators cannot change their processes by simply switching solvents. Accordingly, decisions concerning automatic listing will be of critical importance to the many small businesses which comprise the drycleaning industry.

We believe that perc should be regulated as stringently as is appropriate only if sound scientific information indicates that such regulation is warranted. We do not believe that regulation is warranted in the absence of sound scientific data.

Indeed, we view the developments that have led to perc being included in the group of substances which may be automatically listed as a textbook example of why substances should not be automatically listed.

The committee is probably aware that the basis for the claim that perc may be a hazardous pollutant is a single National Cancer Institute bioassay performed with rats and mice. However, that single bioassay was seriously flawed in many respects and has been largely discredited.

In my written testimony and in the attachments to that testimony, several comments of Government agencies having responsibility for reviewing such bioassays are set forth. In our view, the Science Advisory Board correctly concluded at its September 1982 meeting that the available data provides no evidence of perc being a human carcinogen.

Further, two tests of perc are being conducted now. The results of these tests are obviously relevant to any decision to list perc as a hazardous air pollutant. However, there is no certainty that all of these results will be available within the 2-year timeframe that would be mandated by S. 768. Thus, the present legislative language in S. 768 would seriously affect our industry automatically even if these tests later prove that perc is not harmful, just because testing is not completed on time.

We are also concerned about the stringency of emission limitations if perc is listed as a hazardous air pollutant. S. 768 would require that such limitations be set at the lowest emission rates achieved in practice. There is no certainty that this level can be attained by most small business drycleaners.

Instead of statutorily required limitation, we suggest that emission standards for hazardous air pollutants be set at levels that would avoid significant health risks but add that significant must be given real meaning in this context.

In conclusion, we believe that regulation of potentially hazardous air pollutants should be based on sound scientific data and should take account of the realities of the world in which we live. Accordingly, we make the following recommendations with respect to the hazardous air pollutant provisions of S. 768:

One, scientific research on perc should be continued. Further, the process of determining whether substances are hazardous should be accelerated. This process should rely on scientific data and a rational policy concerning the identification of carcinogens.

Two, the automatic listing provisions should be dropped from S. 768.

Three, flexibility ought to be given to EPA in circumstances where it is not possible for the agency to make a rational decision within the timeframe specified. If EPA does not have adequate data on which to base a decision within the 2-year timeframe, it should be able to postpone decision until that data is available. S. 768 should be revised to permit this.

Four, the standard for regulation of listed pollutants should be clarified so that it is clear that limitations are set at levels which would avoid significant risks. We would be happy to work with committee staff to develop such a clarification.

Thank you for this opportunity to present the views of the Laundry Cleaning Council. I will be happy to answer any questions you may have.

Senator STAFFORD. Thank you very much, Mr. Contney and Mr. Helmers. We appreciate the time and trouble and effort you have gone to to be here with us this morning.

I am sorry that so many members of our committee are at other committees; I have two others myself that are in session, but this gets top priority with me, by necessity.

So we thank you. There may be some questions from members in writing, if that is agreeable to you to respond in writing at your convenience.

Again, we express our appreciation for your being here this morning.

This will conclude this morning's hearings, and the committee will stand in recess subject to call of the Chair.

[Whereupon, at 11:45 a.m., the committee recessed, to reconvene at the call of the Chair.]

[Statements supplied for the record follow:]

COUNCIL OF INDUSTRIAL BOILER OWNERS

PRESIDENT
William B. Marx

TESTIMONY
ON BEHALF OF THE
COUNCIL OF INDUSTRIAL BOILER OWNERS
BY
J. C. SCHWEGMANN, MANAGER OF AIR SERVICES,
KAISER ALUMINUM AND CHEMICAL CORPORATION
ON
CLEAN AIR ACT AMENDMENTS OF 1983 (S. 768)
BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
November 17, 1983

Introduction

I am J. C. Schwegmann, Manager of Air Services, Kaiser Aluminum and Chemical Corporation and a member of the Environmental Committee of the Council of Industrial Boiler Owners ("CIBO"). I am accompanied by William B. Marx, president and James P. Rathvon, CIBO counsel.

CIBO is a broad-based association of industrial boiler operators and related equipment manufacturers, representing sixteen major industries, independent of public utilities. CIBO was formed in 1978 to encourage the maximum exchange of relevant information among its members and between industry and government to assure that public policy in fuel utilization and environmental areas is realistic in light of the contribution to our economy of industrial boiler users and their support of the free market.

Scope of Testimony

Because our interests are confined to issues relating to industrial steam generation, we will limit our comments to those provisions in the bill which would affect fuel use in industrial boilers. These are as follows:

A. Sec. 182 - "Research and Special Studies"
B. Sec. 183 - "Acid Precursor Controls"
C. Sec. 186 - "Major Stationary Source Reduction Requirements"

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Specific Comments

A. Sec. 182 - "Research and Special Studies"

- Sections 182(a) through (f) include stages of review by the Acid Precipitation Task Force, the Acid Precipitation Scientific Review Board, the Office of Technology and Assessment and the EPA. CIBO urges that the public sector be invited to participate in this process to assure that fuel burning industries, designers and manufacturers are able to contribute their specialized knowledge in our search for practical solutions.

- Section 182(c)(1) requires that the Acid Precipitation Task Force ". . . shall also conduct and support research on advanced flue-gas cleaning and precombustion fuel treatment technologies and inherently low-emission combustion processes. . . ."

  This is an important and beneficial provision since there are many promising emerging technologies for burning coal, which remove acid precipitation precursors, before, during and after combustion which such research should be encouraged.

- CIBO strongly supports the provisions of 182(e)(2) which require that an assessment be made of benefits and costs associated with planned actions before they are implemented, and 182(f) which calls for hearings by the Congress to provide a basis for further action. CIBO believes that this study will reflect the fact that was stated in the National Academy of Sciences report, "Acid Deposition; Atmospheric Processes in Eastern North America", "It can be stated as a rule of thumb that the farther a source is from a given receptor site, the smaller its influence on that site will be per unit mass emitted." Only by identifying the relative impact of all sources will it be possible to develop cost-effective and equitable control of pollutants."

- Section 182(g) requires the Administrator to (1) develop an inventory of nitrogen oxide ("NO_x") sources; (2) report on control technologies; and (3) make possible control recommendations.

Because the role of NO_x as a potential precursor to acid deposition is not well understood, and since NO_x emission control technologies are in the early stages of development, we support this provision.

B. Section 183 - "Acid Precursor Controls"

While CIBO believes that the scientific evidence does not support the need for controls or the specific provisions of this legislation, any control strategy should include the most equitable cost-effective solutions.

° Cost Effectiveness - Because of their small size, stringent control of industrial boilers is not cost-effective. Thus, the imposition of such direct control requirements could result in excessive costs to the public, in most cases three to four times greater than those resulting from control of very large sources.

° Equitable Burden - Electricity used by industry in 1981 totalled 2.85 quads at a cost of $37 billion. Thus, at a forecast average industrial rate increase of at least 15%, control measures imposed on the utility industry will result in an industrial cost increase of more than $5 billion annually, which must be added to the cost of products and services bought by the public. Added to this financial burden, of course, will be any direct industrial control costs.

° Air Quality Impact - In 1981 industrial boilers consumed less than 10% of the nation's total coal use. During the next 10-12 years this industrial coal use is widely predicted to expand by no more than 3% annually, with a corresponding small increase in SO_2 emissions. Underscoring this modest impact is a recent State of Pennsylvania study showing that even with maximum feasible increased industrial coal use, the added SO_2 emissions would only affect the present SO_2 inventory by 1.2% in that state..

The need for cost-effective and equitable action is of vital concern to the industrial steam producer as well as to other fuel burning and energy using segments of industry. Severe and expensive controls which produce little environmental improvement in the so-called sensitive areas are likely to occur under the present legislative proposal. Although the scientists who produced the National Academy of Sciences report on Acid Deposition were unable to assign specific values to the role of the various sources, both nearby and remote, they clearly indicate that both size of source and proximity to the receptor help determine the benefit of any reduction in emissions. Thus, widespread and stringent emission reductions without proper regard to these factors will produce inequitable burdens on these sources whose impacts are already small.

Furthermore, any mandated specific control methods based on uncertain scientific analysis would inhibit the making of sound economic decisions by business with the following deleterious economic, energy and environmental effects:

1. Hamper expansion, limit efforts to increase productivity and reduce industrial competitiveness;

2. Dampen industry's move back onto coal, and away from imported oil;

3. Retard the development of emerging SO_2 and NOx control technologies for industrial applications.

4. Injure the long-term competitive position of U.S. industry.

Sections 183(b) and (c) provide for an SO_2 emissions "cap" based on actual 1980 emissions. This will be particularly harmful in that it will:

1. Bar increased industrial coal use.

2. Severely limit industrial fuel flexibility, restricting a plant's capacity to manage fuel supply interruptions, with potential damaging effects to production, employment and national defense.

3. Impose a second layer of control on new sources, already required to meet the complex NSPS or BACT standards.

4. Set an artificial limit on plant production.

Ironically, a cap based on some past emissions rate, i.e., a "roll back", would impact most adversely those very plants which have aided achievement of an important national energy goal through recent increased coal use. In fact, the number of recently installed coal-fired boilers potentially facing exposure to this onerous requirement is large, over 200. They represent 11 two-digit SIC industrial groups and are located in 24 states of the "long range transport corridor." This statement applies equally to any NO_x emissions cap, too.

(Note: CIBO will submit a number of these case histories for the record.)

In effect, this provision also would discriminate against certain regions. Any emission offsets for new sources particularly discriminates against states that do not have older industry from which to seek offsets, or states where industrial growth is occurring rapidly, e.g., the southern states.

Section 183(e) would impose an emissions cap on nitrogen oxides. This will exacerbate the bias against coal use, since the higher ratio of NOx emissions over oil or gas (7:3:2) would in effect bar increased industrial coal use and cause reconversion away from coal in some plants. Furthermore, because of the emerging NOx control technologies and the lack of understanding of the role played by NO_x in the formation of acid precursors, referred to above, such a limitation is especially inadvisable now. Thus, control strategies developed now and in the near future should be limited to SO_2 emissions until these NOx control processes are commercially demonstrated for industrial use.

It also should be noted that the recent marked increase in the use of waste fuels by industry would be curtailed, since most of these fuels have higher rates of NO_x formation than gas or oil. This could actually increase SO_2 emissions, since most of these displaced waste fuels contain very small amounts of sulfur.

Section 183(e) also affords an exemption for utility boilers defined as "coal capable" under the Fuel Use Act. If they are to be covered, industrial boilers should also be granted such an exemption.

The Percentage Reduction Requirement

Finally, CIBO believes that any Clean Air Act Amendment should include the repeal of the percentage reduction requirement as it applies to industrial boilers. This requirement is not a suitable or cost-effective way to control sulfur emissions from industrial boilers. Mandating the use of scrubber systems would greatly increase the cost of industrial coal use, increase energy consumption by a factor of two to three, and increase boiler house manpower requirements substantially while providing minimal air quality improvement.

Closing

CIBO believes that today the Nation does not have the data nor the understanding to put in place an effective and deposition control program. Recent studies, notably the National Academy's "Acid Deposition; Atmospheric Processes in Eastern North America", make it clear that today it is not possible to identify the specific change in the acid deposition patterns that would result from a given change in precursor emissions, nor to determine the specific importance of local sources and long-range transport. As a consequence, CIBO states its belief that these undertainties make it virtually impossible for Congress to legislate equitable and cost-effective solutions to this problem at present.

COUNCIL OF INDUSTRIAL BOILER OWNERS

December 20, 1983

PRESIDENT
William B Marx

Senator Robert T. Stafford
Chairman, Committee on Environment
and Public Works
410 SDOB
Washington, D.C. 20510

Dear Senator Stafford:

As a follow-up to our testimony of November 17, 1983 before your committee regarding the Clean Air Act Amendments of 1983 (S. 768), we are pleased to enclose additional information which we request be included in the hearing record.

On pages 4 and 5 of our testimony we pointed out that the imposition of an historical emissions cap would have the following deleterious effects:

- Hamper expansion, limit efforts to increase productivity and reduce industrial competitiveness;
- Dampen industry's move back onto coal, and away from imported oil;
- Retard the development of emerging SO_2 and NOx control technologies for industrial application;
- Injure the long-term competitive position of U.S. industry;
- Impact most severely those companies which have recently increased their coal use;
- Discriminate against certain regions.

We believe that the enclosed fifteen case histories demonstrate all of these points.

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Twelve of the cases are found in the southeast sector of the United States:

Louisiana	3	Kentucky	1
Alabama	2	Mississippi	1
Florida	2	South Carolina	1
North Carolina	2		

Note: Of the remaining 3 cases, 1 is in Idaho and 2 are in Michigan.

Seven of the 15 cases involve severe economic consequences:

- o Plant closure;
- o New plant - cancellation or delay;
- o Plant expansion - cancellation or delay;
- o Production cutbacks.

We believe these case histories further substantiate the conclusions set forth in our testimony.

Thank you for this opportunity of submitting additional information for the committee's consideration.

Sincerely,

William B. Marx

William B. Marx
President

WBM:mm
Enclosures (15)

ALTON

ALTON PACKAGING CORPORATION
A member of the Jefferson Smurfit Group
Mill Division: Alton, IL 62002 • 618/463-6000

JACKSONVILLE MILL
1915 WIGMORE STREET
P. O. BOX 150
JACKSONVILLE, FLORIDA 32201
TELEPHONE 904/353-3611

#1

December 5, 1983

Mr. William B. Marks
Council of Industrial Boiler Owners
11222 Silverleaf Drive
Fairfax Station, Virginia 22039

Dear Mr. Marks:

We reply to your questions asked in your letter of November 23, 1983, as follows:

1. When did your boiler go into service?
   May 1983
2. Required SO_2 emissions limit.
   .66 # per million BTU's
3. How SO_2 standard is met?
   Wet scrubber with second SO_2 stage in separator.
4. % sulfur in fuel?
   1 - 3.5%

Sincerely,

R. Burr

E. R. Burr
Manager of
Manufacturing & Engineering
Services - Mills

ERB:lab

Container Corporation of America
500 East North Avenue
Carol Stream, Illinois 60187-2182
Phone 312 260 6700

#2 & #3

December 12, 1983

Mr. William B. Marx, President
Council of Industrial Boiler Owners
11222 Silverleaf Drive
Fairfax Station, VA 22039

SUBJECT: CIBO Acid Rain/Emissions Cap Survey
Your November 23, 1983 Letter

Dear Mr. Marx:

Thank you for the above letter. The subject of additional restrictive legislation on boiler emissions is of concern to us. We would appreciate being kept informed on the issue.

Answers to your four questions concerning our new power boilers are given below:

Question	BOILER No. 4	BOILER No. 7
1	September, 1981	December, 1982
2	1.2 lb/MM BTU	1.2 lb/BTU
3	Compliance Coal	Compliance Coal
4	0.75 to 1.5	0.75

Our Boiler No. 4 is a 390,000 lbs/hour, stoker-fired unit capable of burning any combination of wood waste and coal. Our Boiler No. 7 is a 770,000 lbs/hour, pulverized coal-fired unit. Both are located in attainment areas.

Sincerely,

Paul E. Trout
PAUL E. TROUT
Corporate Manager
Environmental Control

6123E/vs

Acid Rain Legislation Impacts

Background: Crown Zellerbach has proposed the construction of a coal fluidized bed combustor cogeneration project at its St. Francisville, Louisiana Kraft Pulp and Paper Mill. The facility is designed to replace the existing low sulfur oil and gas fired boilers and provide lower cost electrical energy for the pulp mill.

The proposed advanced technology energy system is being reviewed by the Louisiana authorities for construction permits to meet Utility New Source Performance Standards and Prevention of Significant Deterioration regulations. Sulfur dioxide emission rates are expected to be 0.5 lb per million btu which is equivalent to 90% SO_2 removal. Control of NO_x would result in an emission rate of 0.12 lb/million btu which is 24% of the NSPS standard.

Proposed acid rain legislation (S. 769 and S. 145) would result in an emission cap on SO_2 and NO_x emissions. Any increase in emissions would require emission offsets.

Issue: Unless new or modified sources are exempted from the emission cap, new technology which will result in energy conservation and very low air pollution emissions will not be permitted to commence operation because emission offsets are not available in Louisiana.

Discussion: The Mitchell and Stafford bills as now drafted would probably prevent Crown Zellerbach from replacing their existing energy facilities at St. Francisville. Louisiana regulations have required the facilities to meet a low sulfur fuels standard for emissions (1.0 lb per million btu). There are no readily available offsets, such as in other midwest and eastern states where low sulfur fuels have not been required.

Conversion to a coal based energy system which can provide lower electrical and steam energy costs is necessary for the economic viability of the mill.

Conclusion: An emission cap on sulfur dioxide and nitrogen oxides on a state-by-state basis would result in severe economic constraints on production facilities in states such as Louisiana, which have required low sulfur fuels in the past. Generation of electrical energy from coal resources in efficient, lower emission facilities such as St. Francisville, should not be prevented.

DART & KRAFT

Romer G. Wilsek
Director
Regulatory Affairs

December 14, 1983

Federal Express

Mr. William B. Marx
Council of Industrial Boiler Owners
11222 Silverleaf Drive
Fairfax Station, Virginia 22039

Re: Request for Information - New Coal-Fired Boilers

Dear Bill:

In response to your November 20 letter, we have installed a coal-fired boiler since 1977; however, the one boiler is a small industrial steam boiler rated at 20,000 #/hr.

The boiler was installed and placed in operation in 1980 and burns low sulphur western coal having a bag filter for particulate emission control of the exhaust gas.

The impact of establishing 1980 as a baseline for SO_2 and NO_x emissions we believe might not be as severe on our operations as would be the case for larger industrial boiler operations.

If offset requirements are established and impact boilers of this size using low sulphur coal, we may be required to convert from coal to gas/oil firing at an estimated cost of $400,000.

We share the concerns of the Council members in regard to the impact on new installations where coal is currently an economically viable fuel for industrial boiler use. The imposition of a 1980 base cap on new sources of SO_2 and NO_x emissions could result in eliminating coal as a viable fuel source for industrial boilers.

Very truly yours,

Romer G. Wilsek

Romer G. Wilsek

RGW/ma

Dart & Kraft, Inc. 2211 Sanders Road Northbrook Illinois 60062 (312) 498-8231

E. I. du Pont de Nemours & Co.
Wilmington, North Carolina

Background

E. I. du Pont de Nemours & Company operates a Textile Fibers plant in Wilmington, North Carolina. Prior to 1982, the site burned No. 6 fuel oil for steam generation. At that time, a new two-boiler coal-fired powerhouse was put in operation.

The coal conversion project was economically justified through coal to oil price differentials. PSD permits were obtained for use of equivalent SO_2 emission coal as compared to oil firing. Baghouses were installed for particulate collection, and furnace design for 0.7 lb/MMBtu NOx emission was included. Thus, BACT was applied to the design of this facility.

The Issue

Certain Congressional acid rain bills have been introduced which would cap SO_2 and NOx emissions at 1980 levels. If such a cap were applied to this facility, the new coal boilers would have to switch back to imported oil in order to meet 1980 NOx emission levels. This is due to the inherently higher nitrogen content of coal. Such a restriction on operation would be a severe economic penalty to the facility and the multi-million dollar investment would have been wasted.

JCD/dlt
JCD1:49
12/19/83

BFGOODRICH COMPANY CHEMICAL PLANT - CONVENT, LOUISIANA

Background

The BFGoodrich Company constructed in Convent, Louisiana a chemical manufacturing plant in 1980. An extensive environmental review was conducted on the facility prior to construction by the USEPA, the Louisiana Air Control Commission and the Louisiana Department of Natural Resources. The environmental review on air pollutant emission included an environmental impact assessment, PSD permit review (including Best Available Control Technology (BACT)), Louisiana certificate of approval for air emissions and new source performance standards (NSPS) for an industrial coal fired boiler. Thus, the Convent plant complies with very stringent environmental requirements.

A number of acid rain proposals are being considered now by the Administration and Congress. Most would require emissions reductions by certain sources of sulfur dioxide and nitrogen oxide emissions and would establish a baseline using actual emissions during 1980. Under certain of these proposals, emission increases above this 1980 baseline resulting from expansion of an existing facility or construction of a new facility, must be immediately offset.

The Issue

The BFGoodrich Company started operation of its Convent manufacturing facility in 1981. The facility has a coal fired boiler equipped with Best Available Control Technology for SO_2 and NO_x emissions. A rollback to the 1980 emission levels for SO_2 and NO_x would in effect require zero emissions which is not technically or economically feasible. Further, it is contrary to the purposes of Clean Air Act including, but not limited to Section 109 - National Ambient Air Quality Standards, Section 110 - Implementation Plans, Section 111 - New Source Performance Standards and Part C - Prevention of Significant Deterioration including Sections 160 through 170.

Discussion

The BFGoodrich Company spent considerable time, effort and capital to get environmental approval and construct a modern chemical manufacturing plant, including the only coal fired boiler in the State of Louisiana. The SO_2 and NO_x controls and emisson limits represent Best Available Control Technology. However, the plant did not start operation until 1981. If Congress or the Administration adopts 1980 as the baseline for rollback of SO_2 and NO_x emissions, the BFGoodrich Company would most likely have to cease manufacturing since further reduction of SO_2 and NO_x at this site is not possible.

JWL/kp
4164q

EMISSIONS CAP PROBLEM

INTERNATIONAL PAPER CO. MILL - MANSFIELD, LOUISIANA

BACKGROUND

International Paper Company (IP) constructed in Mansfield, Louisiana, a pulp and paper mill which commenced operation in December 1981. As a new source located in an attainment area for purposes of the Clean Air Act, the Mansfield Mill has to comply with New Source Performance Standards (NSPS) and Prevention of Significant Deterioration (PSD) requirements, including Best Available Control Technology (BACT). Thus, the Mansfield Mill meets strict air emission limitations.

A number of acid rain bills have been introduced during this session of Congress and several options are being studied by the Administration. Most would cap emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x), using actual annual emissions from 1980 as the baseline. Some of the plans would require any facility not operating in 1980 to obtain "simultaneous (immediate) emission offsets" prior to commencing operation; others would exempt new sources meeting NSPS from the emissions cap.

IMPORTANCE TO IP

Unless new sources are exempted from any emissions cap or unless an updated baseline is adopted, clean, efficient mills like Mansfield may not be able to commence or continue operations because SO_2 and NO_x offsets are not available or not affordable.

DISCUSSION

Proposals that require new sources to obtain offsets for SO_2 and NO_x emissions would severely inhibit economic growth in many states and would very possibly prevent IP's Mansfield Mill from continuing to operate. Since it is impossible to obtain zero emissions from scrubbing or fuel switching, offsets would have to be obtained. Because the Mansfield Mill is located in a rural area and in a state with low emission rates, it is not clear that the necessary SO_2 and NO_x offsets are available. Even assuming that a portion of the offsets were available, IP would also be required to install expensive and unproven additional controls (technology beyond BACT) in order to reduce emissions to the required level of offsets.

Penalizing newly constructed, efficient, and clean facilities like Mansfield hardly constitutes wise national policy. Economic growth, especially when controlled by BACT, should not be sacrificed to achieve emission reductions. This is particularly true in the case of the Mansfield Mill which commenced operation in 1981.

CONCLUSION

Requiring SO_2 and NO_x offsets for the Mansfield Mill could prevent operation of the mill, since offsets are probably not available. Therefore, IP urges that new facilities be exempt from the emissions cap.

KENTUCKY AGRICULTURAL ENERGY CORPORATION

Power Alcohol · DDGS · Grain

December 8, 1983

Mr. William B. Marx, President
Council of Industrial Boiler Owners
11222 Silverleaf Drive
Fairfax Station, VA 22039

Dear Mr. Marx:

Thank you for your letter of November 23, 1983. We are very interested in the development of legislation concerning acid rain. Below you will find the answers to your questions. Please advise us if we may be of any further assistance to your effort.

> We have two (2) 60,000 lbs/hr (550 psi) coal-fired, fluidized bed steam boilers. We first commissioned these boilers in December of 1982.
>
> The law in the state of Kentucky limits SO_2 emissions for our boilers to 1.2 pounds of SO_2 per million BTU of coal burned. However, we are operating under a permit with lower SO_2 limits than stated above. We burn 2 to 5% sulfur coal in the presence of limestone. The limestone absorbs the SO_2 as the primary vehicle for SO_2 control. We do no scrubbing of flue gas.
>
> We also have an oil-fired 80,000 lbs/hr backup steam boiler which is normally not in service. There are no SO_2 emission control devices on this boiler.

I am looking forward to further information from you on this effort.

Sincerely,

J. M. Braden
Vice President/Plant Manager

/pl

CC J. N. Wade
G. A. McCarty
File 5.2

Post Office Box 657, Franklin, Kentucky 42134 502-586-9586

Acid Rain Legislation Impact

Background

R. J. Reynolds Tobacco Company is constructing a new manufacturing plant near Winston-Salem, N. C. This facility will occupy a floor space of approximately 1.5 million square feet. Construction began in April 1983 and production will begin in January, 1986. This facility has been designed to meet existing stringent Clean Air Act emission limitations, including the installation of Best Available Control Technology (BACT) required under the Prevention of Significant Deterioration (PSD) program.

Several proposals are being considered by Congress and the Administration concerning action to be taken on acid rain. Most proposals include a cap on emissions of sulfur dioxide and nitrogen oxide, using actual emissions from 1980 as the baseline. Some proposals would require facilities established since 1980 to obtain emission offsets prior to commencing operation.

Issue

If an emissions cap is adopted, this new facility and new efficient plants like it, may not be able to commence operations because SO_2 and NO_x offsets are not available or not affordable.

Discussions

The potential sources for obtaining emission offsets in this area are limited. The problem of establishing offsets is expected to be especially difficult or impossible in areas which have low emission levels. Such low emission levels will be found where the industrial base is small and/or areas where stringent emission limitations have already been met. In this regard the emission cap proposals tend to give the higher emission level areas an economic advantage in that offsets are likely to be more readily available and less costly.

Plans for the facility to begin operation as scheduled would definitely be in jeopardy if offsets are required. An obvious problem would be establishing the necessary offsets by the time of operation. This would be highly unlikely and nearly impossible.

Offsets would still be needed even with the application of additional control beyond BACT. Such technology would be very costly and unproven. The availability and cost of those emission offsets are not clearly defined, creating a great deal of uncertainty as to the eventual cost of this facility, even if the offsets are not required immediately upon start-up.

Conclusion

Facilities like this new plant which have been approved and permitted for construction with the Best Available Control Technology, should not be required to develop offsets under an emission cap approach. Furthermore, the emission cap approach, as generally proposed, would result in a detrimental effect on economic development and industrial growth and create inequitable pollution control costs.

DMR:ss:1659s

cibo
COUNCIL OF INDUSTRIAL BOILER OWNERS

PRESIDENT
William B Marx

#11 and 12

Steelcase*

Grand Rapids, Michigan

Boiler went into service - October 1981

Required SO_2 emissions Limit - 1.6# per million BTU

How SO_2 standard is met? - compliance coal

% sulfur in fuel? - 1% sulfur

Kentwood, Michigan

Boiler went into service - November 1983

Required SO_2 emissions limit - 1.6# per million BTU

How SO_2 standard is met? - compliance coal

% sulfur in fuel? - 1% sulfur.

William B. Marx

* Received by telephone from Mr. Gary Egleston of Steelcase

11222 Silverleaf Drive, Fairfax Station, Virginia 22039 • (703) 250-9042

MEMORANDUM

RE: UNION CAMP MILL - EASTOVER, SOUTH CAROLINA

BACKGROUND

Union Camp is constructing in Eastover, South Carolina a (paper and pulp) mill which will commence production in September 1984. Construction began in 1982. As a new source located in an attainment area for purposes of the Clean Air Act, the Eastover mill must meet New Source Performance Standards ("NSPS") and Prevention of Significant Deterioration ("PSD") requirements, including Best Available Control Technology ("BACT"). Thus, the Eastover facility will meet strict air emission limitations.

A number of acid rain bills have been introduced during this session of Congress and several proposals are being studied by the Administration. Most would cap emissions of sulfur dioxide and nitrogen oxide, using actual annual emissions from 1980 as the cap. Some of the plans would require any facility not operating in 1980 to obtain "simultaneous (immediate) emission offsets" prior to commencing operation; others would exempt new sources from the emissions cap.

THE ISSUE

If an emissions cap is adopted, clean, efficient mills like Eastover may not be able to commence operations because SO_2 and NO_x offsets are not available or not affordable.

DISCUSSION

Proposals requiring new sources to obtain offsets for SO_2 and NO_x emissions would severely inhibit economic growth in many states and would very possibly prevent Union Camp's Eastover mill from ever commencing operation. It is not at all clear that the necessary SO_2 and NO_x offsets are available, and offsets are the only alternative under some acid rain plans, since it is impossible to obtain zero emissions from scrubbing or fuel switching. In addition, under some options, the offsets are required to be made prior to commencing operation, thus jeopardizing Union Camp's investment of $600 million in the Eastover facility. Even assuming that Union Camp obtained part of the SO_2 and NO_x offsets needed for Eastover, the Company might also be required to install expensive and unproven additional control technology (beyond BACT) in order to reduce emissions to the required level of offsets. Such actions would be impossible to accomplish within the time frame ("simultaneous") required by some proposals.

Penalizing, or preventing construction of efficient, clean, new facilities like Eastover hardly constitutes wise national policy. Economic growth, especially when accompanied by BACT, should not be sacrificed in order to reduce further future emissions. This is particularly true in the case of the Eastover mill, which began construction many months ago.

CONCLUSION

Requiring SO_2 and NO_x offsets for the new Eastover mill will delay or prevent operation of the plant, since offsets are probably not available. We believe an emissions cap is unwise public policy.

MEMORANDUM

RE: UNION CAMP MILL - PRATTVILLE, ALABAMA

BACKGROUND

Union Camp operates a paper mill in Prattville, near Montgomery, Alabama. In the late 1970's, Union Camp embarked on a major program to expand production capacity at the mill. That expansion project was completed in June 1980 and, therefore, the total annual 1980 sulfur dioxide (SO_2) and nitrogen oxide (NO_x) emissions include half a year at the lower production/emission rates.

The emissions increases at the Montgomery mill are small compared to the production increase because the mill expansion meets the emission requirements of both New Source Performance Standard ("NSPS") and Prevention of Significant Deterioration ("PSD") regulations. Pursuant to the NSPS and PSD requirements, Best Available Control Technology ("BACT") has been installed at the Prattville mill.

A number of acid rain proposals are being considered now by the Administration and Congress. Most would require emissions reductions by certain sources of sulfur dioxide and nitrogen oxide emissions and would establish a baseline using actual emissions during 1980. Under certain of these proposals, emission increases above this 1980 baseline resulting from expansion of an existing facility or construction of a new facility, must be immediately offset.

THE ISSUE

Union Camp is already using BACT at the Montgomery mill and a rollback to the 1980 emissions levels for SO_2 and NO_x will require switching to expensive fuels and production cutbacks.

DISCUSSION

The Montgomery mill almost doubled its production after June of 1980; therefore, the proposed baseline year 1980 would not accurately reflect the emissions from that facility. If Congress or the Administration adopts 1980 as the baseline for the rollback of SO_2 and NO_x emissions, Union Camp will be required to switch fuels to reduce its present SO_2 emissions to 1980 levels. Fuel switching is possible; however, the cost of the new fuels to reduce SO_2 emissions will be approximately $855,000 per year based on 1983 prices.

The NO_x emissions reductions required by some proposals cannot be achieved by changing fuels; nor can Union Camp purchase quickly and install control devices which will effectively remove NO_x from the stack gas emissions. Extensive study and pilot tests would be necessary to determine what emission reductions may be achievable from Union Camp's

(more)

PRATTVILLE (continued)

power boilers. All reductions would have to come from these boilers because there are not known methods to reduce NO_x emissions from the recovery boilers and lime kilns.

In addition, it is virtually impossible for Union Camp to establish a 1980 baseline for NO_x emissions because no data exist. Therefore, assuming a baseline will be established for NO_x, a production cutback is the only certain answer to the NO_x reduction which the acid rain legislation would necessitate, with the concurrent loss of jobs depending on the size of the rollback.

CONCLUSION

We oppose provisions which require offsets of sulfur dioxide and nitrogen oxide emissions for new sources and the expansion of existing sources where NSPS and BACT requirements are being met. We believe such rollback requirements run counter to the important national goal of encouraging new, clean, and efficient industrial facilities.

IMPACT OF EMISSIONS CAP PROPOSAL ON WEYERHAEUSER'S COLUMBUS, MS FACILITY

Weyerhaeuser currently operates a thermomechanical (TM) pulp mill and lightweight coated paper manufacturing facility at Columbus, MS. The plant began operation as a new "greenfield" project just over one year ago, and represents a major investment for the company. The plant employs about 380 people.

The company has plans to expand our Columbus operations by adding three additional plants (a kraft pulp mill, a paper mill, and another TM mill with coated paper manufacturing). Bringing these additional plants on line would raise total employment to the 800 to 850 range.

Weyerhaeuser obtained a PSD (prevention of significant deterioration) permit for the full four-plant complex that would allow SO_2 and NO_x emissions as follows:

SO_2	13,316 tons/year
NO_x	6,556 tons/year

However, the facility is not emitting at these levels because the three additional facilities have not yet been built and because we are primarily using low-emissions hog fuel (wood waste material) instead of coal or oil. Estimated current actual emissions are only a fraction of allowable emissions:

SO_2	200 tons/year (1-1/2 percent of allowable emissions)
NO_x	500 tons/year (8 percent of allowable emissions)

If a legal requirement were imposed limiting Columbus to current actual emissions, expansion to the three additional plants would require the installation of scrubbers achieving more than 98 percent reduction of SO_2 emissions, advanced NO_x reduction techniques and/or reductions from other facilities as offsets. The required SO_2 and NO_x control technologies would exceed available state-of-the-art efficiencies and would be very expensive. Sufficient offsets would probably not be available, as Columbus is not near many other large emitting sources.

For these reasons, an emissions cap would be a significant factor in any decision by the company to proceed with the planned expansion (or any other expansion), and could independently result in a decision not to expand the facility. Moreover, if expansion is prevented, our existing large investment could be jeopardized since the economic viability of this plant was based on an analysis that assumed construction of the entire four-plant complex.

s125/1125/e2
11/11/83

STATEMENT OF
JOHN QUARLES, CHAIRMAN
NATIONAL ENVIRONMENTAL DEVELOPMENT ASSOCIATION
CLEAN AIR ACT PROJECT
BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

November 17, 1983

Mr. Chairman and Members of the Committee:

I appreciate this opportunity to appear before you today to present testimony on behalf of the National Environmental Development Association's Clean Air Act Project (NEDA/CAAP) on proposed amendments to the Clean Air Act. NEDA/CAAP is a coalition of industry and 15 trade unions of the AFL-CIO. My testimony will focus on S.768, a bill based directly on legislation developed and approved by this Committee during the 97th Congress.

S.768 by design is intended to assure the continuation of stringent federal requirements for protection of air quality. NEDA/CAAP endorses that goal and commends this Committee for maintaining its steadfast commitment to the protection of public health and welfare.

PERSPECTIVE

In our view, S.768 suffers from a serious deficiency: it fails to simplify the complicated and unnecessarily burdensome requirements of the Clean Air Act which are restricting industrial growth. We believe such burdensome requirements can be changed to improve the procedural aspects of the Clean Air Act without hindering the goal of achieving clean air.

In general the Clean Air Act has been a success because it has stimulated an intensive national effort to reduce air pollution. Nonetheless, most experts agree that the regulatory framework has become excessively complex and that some of the burdens it imposes produce little or no benefit to actual air quality or public health protection. These burdens are not without cost.

A particularly negative feature of the statutory program as it now exists is that it disproportionately restricts the construction and expansion of industrial plants. As a result of the procedural requirements of the prevention of significant deterioration (PSD) and nonattainment provisions added to the statute by the 1977 amendments, construction projects must contend with an intricate and time-consuming system of new source permit review which typically requires one to three years before regulatory approvals can be obtained. Most of that time must be added to the natural leadtime for capital investment projects. Those delays have a chilling effect on economic growth.

The irony is that often, particularly under PSD, the regulatory requirements which generate the greatest uncertainties and delays end up being irrelevant to regulatory approvals and have no effect on the design and construction of the new facility other than to delay it. Some of this red tape could be eliminated at no sacrifice of air quality.

A fact of fundamental importance that has been consistently disregarded in the development of our national air quality program is that industrial modernization is beneficial -- not detrimental -- to environmental quality. Without exception, new plants are cleaner plants. Although great progress has been made in cleaning up pollution from existing industrial facilities, it is much easier to put sound environmental engineering into original design and construction. New plants incorporate the latest and most advanced pollution-control technology. The law requires this, and it is commonplace.

This point was highlighted by a report released in November 1982 by the Conservation Foundation. The report stated, "the modernization of U.S. industrial capacity is important for the environment, not just the economy...Replacement of old industrial capacity with new, whether through reconstruction of old plants or building new ones, promises to significantly reduce the amount of pollution per unit of output."

Environmental policy should encourage the replacement and modernization of obsolete industrial facilities through new capital investment. Instead it does just the opposite.

Despite the urgent need for revision of the Clean Air Act to facilitate industrial modernization, S.768 provides no relief and in fact makes matters worse. This failure is most dramatic with respect to PSD, a point which I will elaborate on and fully illustrate later in my testimony.

This tendency for the Clean Air Act to inhibit the construction and expansion of industrial plants, and hence economic growth, is particularly critical at a time when unemployment is the most serious domestic problem confronting our country. The experts are predicting that the recovery from the recession of the past two years will be weak. The latest figures indicate that our national unemployment rate is now 8.8 percent.

Our economy is undergoing a painful change. From one end of our country to another -- particularly in the heavily industrialized states such as Michigan, Illinois, Ohio, and Pennsylvania -- factories and other industrial plants have been shutting down and throwing people out of work. The rug has been pulled out from beneath entire towns and cities, shaking the very foundations of the local economy and social welfare in those communities. The imagery of smokestack America may no longer be our national dream, but the elimination of jobs in basic industry is leaving a trail of societal trauma and individual tragedy.

There are some who say that these problems are of no concern to this Committee. They argue that environmental quality is too important to be compromised by unemployment considerations. We agree. But they won't tell you that changes can be made to alleviate many of the regulatory burdens, easing unemployment problems, without weakening our protection of public health and air quality.

They will say that environmental regulations have not caused economic and unemployment problems. I disagree. Certainly no one can contend environmental controls are the root of current economic distress. They are not. The origins of our economic problems are of a different order altogether. Nevertheless, any element of national policy which inhibits economic vitality must be tested against the national need for a healthy economy. This definitely includes the Clean Air Act.

This is not only NEDA/CAAP's opinion but the opinion of other experts as well. In a recent article, Robert Crandall (the former deputy director of the Council on Wage and Price Stability who is currently a professor at MIT and a senior fellow at Brookings Institute) concluded, "if the economy is finally rebounding from the chaos of the 1970s, as the administration insists, we shall soon feel the effects of these environmental policies on new industrial and utility development."

S.768 fails to achieve any measure of regulatory reform that would spur growth instead of discourage it. Indeed, it makes the Clean Air Act substantially longer, more cumbersome to administer and enforce, and even more nearly impossible to understand.

How can this be so when the stated goal of this Committee at the outset was to "streamline and simplify the Act?" The failure of S.768 to address Clean Air Act provisions that work against encouraging industrial growth and increasing employment can only be explained in historical terms in reference to the environmental politics which dominated legislative deliberations during the 97th Congress.

Prior to the start of the 97th Congress, many studies of the Clean Air Act had documented the need to streamline its cumbersome requirements, especially with respect to new source review. In particular, the National Commission on Air Quality (a bipartisan commission) published a 350-page analysis of the statute which contained 109 recommendations for statutory revision. The study concluded many reforms could be made to alleviate economic constraints while still protecting air quality. Broad consensus existed among experts that such changes would be beneficial. During the 97th Congress, however, widespread concerns arose that statutory changes might weaken the Clean Air Act, and it became the predominant concern of many legislators to prevent such changes. S.768 was developed in an atmosphere which precluded a thoughtful balancing of objective factors.

In this context, the text of the bill can be understood, but such explanation should not be mistaken as valid justification for the deficiencies of the bill. In the political climate that exists today any fear that the Clean Air Act will be significantly weakened is paranoia. Excessive precautions to protect its integrity are no longer required. The opportunity has returned for a thoughtful and balanced review of what changes genuinely will serve the public interest.

The major national corporations and the building and construction trade unions which comprise NEDA/CAAP urge you to re-examine and change the product of the Committee's work last year. In fact, every American who recognizes the importance of restoring and supporting the vitality of our economy to create jobs has a vital stake in asking this Committee to make revisions to this bill. The Clean Air Act must not retard the delicate recovery of our nation's economy.

Present economic distress emphasizes the need that removal of undue burdens on economic growth must be one of the tests against which proposed amendments should be measured. That is the test which S.768 as it stands cannot pass.

I would now like to provide some comments on specific issues of concern: PSD, nonattainment, hazardous air pollutants, percentage reduction for industrial boilers, and acid rain.

COMMENTS ON SPECIFIC ISSUES

I. PREVENTION OF SIGNIFICANT DETERIORATION

No feature of the Clean Air Act has received more criticism than its requirements for "prevention of significant deterioration." Senator Gary Hart of Colorado, who served as chairman of the National Commission on Air Quality (NCAQ), observed, "PSD...involves the most complicated regulatory scheme ever devised." The single most serious deficiency of S.768 is its failure to provide meaningful PSD reform.

The PSD program applies to the construction of new plants (or expansion of existing plants) in areas already satisfying air quality standards. It requires companies planning construction projects to: (1) obtain regulatory approval before construction, (2) demonstrate the project will not cause a violation of air quality standards, (3) install and operate best available control technology (BACT), and (4) demonstrate compliance with a convoluted set of restrictions known as the "increment" requirements. The first three elements of this system of new source review are sound and should be retained in the law to protect superior air quality wherever it exists. The fourth element -- the increment scheme -- is useless and should be eliminated, at least in all Class II areas.

The essence of increment review is that a project applicant must demonstrate that the residual net emissions which will result from the new industrial facility after applying BACT, when taken in conjunction with new emissions from all other facilities constructed after an arbitrary baseline date, will not exceed specified increases in pollutant concentrations at selected ground-level locations over the concentrations calculated to have occurred at those locations at the baseline date. The technical methods upon which such determinations must be based are notoriously imprecise. The data collection efforts and the modeling of atmospheric dispersion required to produce those hypothetical calculations are costly, time-consuming, and wide open to disagreement between technical experts. Moreover, the calculations even when completed measure such highly localized air quality impacts as to provide no meaningful guide to regional air quality conditions.

Every study on PSD has found that the increment features of the program result in essentially no benefit to air quality. The staff of the NCAQ unanimously recommended that the increment requirements be eliminated. Besides not benefiting air quality, the increment requirements cause severe burdens by substantially delaying the entire regulatory process for approval of construction projects. They are the most objectionable feature in a maze of red tape which significantly discourages capital investments in new plants and creation of new jobs.

The glaring weaknesses of the PSD increment scheme are further described in a NEDA/CAAP document titled, "PSD: Regulation Gone Awry," dated February 1982, a copy of which is attached as Appendix 1.

a. Procedural barriers would prevent states from getting needed relief.

S.768 purports to follow the recommendation of the National Commission on Air Quality to eliminate PSD increments because they are unnecessary (without environmental benefit). The bill instead establishes a time-consuming and costly set of procedures to allow states to "opt-out" of the PSD program.

Some state officials have characterized portions of these procedures as requiring a state-wide Environmental Impact Statement which is beyond their resources to accomplish. Unless changed, the bill will most likely discourage states from opting out, thus locking in a feature of the law which every knowledgable authority has concluded is useless.

b. Under S.768, the complicated PSD program will be expanded even further.

Currently, the PSD program only applies to two pollutants: sulfur oxides and particulates (dust). The Clean Air Act's present provisions call for the extension of the complicated PSD increment feature to all major pollutants regulated under the Act.

Most authorities and EPA studies have agreed that these other pollutants are not suited to control under this type of requirement. Instead, they recommend relying on the requirement that new plants put on BACT for these pollutants. Without changes to these provisions, the current law will double the existing complexity of permitting new projects.

c. S.768 aggravates the complexity of establishing control technology requirements.

The proposed amendments retain the valid requirement that all new projects install BACT, but they increase the complexity of making determinations of what BACT requires for individual plants. Current law requires that BACT determinations be made individually for each facility, taking specified relevant factors into account. The proposed amendments would require the permitting agency to survey all similar new facilities in a multi-state region and to document reasons why the levels of control achieved at such facilities can, or cannot, be matched at the project under consideration. These new requirements will make little change in the controls actually installed in new facilities, but they typify the tendency to insert additional time-consuming, complicated and unnecessary paperwork burdens into the permitting process.

d. S.768 ignores economic and energy considerations in designating new Class I areas.

While S.768 makes it virtually impossible for a state to opt-out of portions of the PSD program, it eliminates all the provisions for careful determinations for new Class I areas. Class I is a Clean Air Act designation which generally will allow no economic or energy activities in a particular area: air quality is to remain pristine.

In 1977, recognizing the serious consequences of Class I determinations, Congress specified procedures which require the state to consider economic and energy consequences in addition to the environmental benefits. S.768 eliminates the possibility of considering economic and energy factors.

e. S.768 extends the number of areas where development will be virtually impossible.

Under the Clean Air Act, EPA is required to protect visibility associated with national parks and other Class I areas. This program requires any new facility which proposes to locate around these areas to have no adverse effect on visibility. If any degradation of visibility can be predicted, the construction permit must be denied. Existing plants in or around these areas must also install additional sets of controls if emissions adversely affect visibility. The process for evaluating these effects is frought with uncertainties.

The original intent of the law was to protect visibility within the defined park and wilderness areas, approximately 27.9 million acres. S.768 now proposes to expand this program to areas outside these parks, to so-called integral vistas.

The list of integral vistas which S.768 intends to include would put an additional 13.4 million acres off limits to any economic development. This list has never been reviewed by state and local governments or other important publics.

The effect of this proposal will be to lock in buffer zones around national parks which is likely to slow development even though it would not have an effect on the parkland area.

II. NONATTAINMENT

S.768 needs careful review in light of the November 2, 1983, rules promulgated by EPA regarding the construction ban and extension of deadlines. EPA has substantially revised its regulations to limit the effect of the construction ban and to provide limited extensions of deadlines. We are not sure of the Committee's opinion about these new regulations. It is not clear what the effect of this new policy will be in alleviating many of the problems created by the current statutory deadlines and construction ban. It is also not clear whether this will solve problems or create a new level of confusion. Whatever the case, due to the passage of time, the deadline provisions of S.768 are outdated and need revision.

a. S.768 continues the contruction ban.

The current bill continues the principle of the construction ban. S.768 allows the easing of construction bans only for those areas which received deadline extensions. This will leave intact the threat of a ban for all those not listed by EPA. In our opinion, the ban is self-defeating: it punishes the innocent with the guilty. Moreover, the construction ban has failed to apply pressure to provide compliance with SIP (State Implementation Plan) requirements because it applies pressure on those who are unable to fix the problem.

The construction ban is irrelevant to the problems confronting the planning process. It prevents air quality improvements that might have been achieved from new construction. Companies and facilities with construction and expansion plans that will significantly reduce emissions of air pollutants are prevented from putting those plans into effect.

b. S.768 misses the opportunity to streamline requirements in nonattainment areas.

Currently, different requirements for determining the stringency of technology-based pollution controls exist between areas not meeting federal air quality standards (nonattainment) and areas which do meet federal standards (PSD). LAER (Lowest Achievable Emissions Rate) is the current standard for nonattainment areas while BACT (Best Available Control Technology) is required in attainment areas. Many authorities recommend these control requirements be streamlined by setting uniform control requirements (the PSD requirements) for all areas.

While S.768 does establish uniform control technology requirements for all areas, it complicates the process by adopting the new BACT requirements, already incorporated under the PSD amendment. This provision considerably complicates the process for making determinations because permitting agencies will need to make extensive searches to decide the most stringent determination in the nation.

c. S.768 will discourage new construction.

The bill codifies an August 1982 court decision which has the effect of banning construction even when there is a decrease in area[illegible]e air pollution. The court decision resulted from a suit brought against the EPA by the Natural Resources Defense Council. The suit sought to overturn an EPA regulation which had defined what constituted a "source" of new air pollution. The regulation was issued in October 1981 and was intended to apply to areas of the country which had not attained federal air quality standards.

The new definition would have allowed industrial plants to balance (or average out) increases and decreases in air pollution emissions from various facilities so there would be no net increases in emissions from the plant as a whole. If emissions from the plant did not result in increased air pollution, new construction could proceed in areas subject to the construction ban.

The effect of the court's decision -- and of S.768 -- may be to severely restrict growth and expansion in many industrial areas of the country. It means that plants may be prevented from making necessary process changes to respond to market demands, and from replacing worn-out equipment with newer, more energy-efficient and less-polluting equipment -- even though they would be improving air quality.

III. HAZARDOUS AIR POLLUTANTS

S.768 sets extremely tight deadlines for scientific review of large numbers of commonly used chemical substances. If EPA fails to complete this review within the specified timeframe, the substance will be automatically listed and subsequently regulated ... regulated without a decision.

The substances that will be reviewed and subjected to S.768's "regulation without decision" provision are used in almost every major industry in this country. Some of the substances, such as solvents, are used directly by more than 120 different industries as dry cleaning solvents, adhesives, aerosols, and cleaners. Other substances are used as intermediates to produce a wide variety of plastics, fibers, paint, auto parts and other consumer products.

S.768 will automatically regulate many of these substances simply because government cannot, or will not, review the evidence and make a decision. Experience has shown that such regulation will disrupt industrial production processes in a large segment of American industry in a number of significant ways.

First, many businesses will have to divert scarce capital to purchase costly new control equipment. Second, in those cases where no known substitutes are available for the regulated substance, the users may be forced out of business. Third, where alternative materials are available, businesses will be required to spend significant capital to alter physical facilities, equipment, production specifications, and labeling to accommodate the substitute. Finally, since a significant number of the substances are exported every year, increased cost of producing these substances will make them less competitive in the international market.

These four factors demonstrate the potential negative economic impact of any arbitrary regulation on the industrial sector. However, these substances "may reasonably be anticipated to result in an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness," regulation to protect public health is necessary and appropriate even if broad economic impact will result.

To protect the public interest, however, it is imperative regulation be based on good science and the need to protect public health -- not merely on the failure of EPA to meet deadlines and make decisions. "Regulation without decision" unwisely forces industry to make costly changes to their operations. The complexity and confusion it will create may hinder control of substances which may truly be hazardous.

IV. PERCENTAGE REDUCTION FOR INDUSTRIAL BOILERS

The Clean Air Act Amendments of 1977 inserted a new provision requiring as part of the New Source Performance Standards (NSPS) new boilers achieve a "percentage reduction" in sulfur emissions regardless of the initial level of sulfur in boiler emissions. Percentage reduction is essentially a design standard (mandating scrubbers) rather than a performance standard (setting a level of emissions which must be met).

EPA promulgated regulations for utility boilers in 1979 and is still working on proposed regulations to be applied to new industrial boilers. Due to differences in interpretation of the 1977 Act, the applicability of percent reduction to industrial boilers is still in doubt.

What is clear is that the application of percentage reduction to industrial boilers is extremely costly, yielding very little environmental benefit.

We do not argue with the propriety of the government setting realistic performance standards for reduction of sulfur emissions from industrial boilers. However, we believe industrial boiler operators must retain the flexibility to select the most cost-effective and appropriate methods to comply with such standards. Among the options which industry might choose are the use of low sulfur coal, coal benefaction, fluidized bed combustion, and alternative gas cleanup techniques under development.

The percentage reduction issue is one that was extensively debated in the last Congress. The repeal of percent reduction for industrial boilers did not appear to be controversial. We urge this Committee to include this in its new Clean Air Act Amendments.

V. ACID RAIN PROVISIONS

During the past several years the national debate over acid rain has grown. That debate has focused attention on various possible adverse consequences caused by acid rain, various possible strategies for reducing acid rain, and costs associated with these proposals. S.768 proposes an ambitious national control program designed to reduce emissions of sulfur dioxide within the 31 eastern states by 8 million tons per year.

NEDA/CAAP has not studied the principal questions presented in the debate over acid rain. This issue lies beyond our areas of concentration and expertise, which have focused primarily on those features of the Clean Air Act that obstruct legitimate economic growth without meaningful benefit to air quality. Accordingly, we have not undertaken to evaluate such damage that may result from acid rain deposition or the cost or other dislocations that might result from controls, nor have we attempted to conclude whether the benefits of various possible control efforts warrant those costs.

We are troubled, however, by the possibility that regulatory requirements which may be adopted for the purpose of controlling the effects of acid rain may have unforeseen consequences of further obstructing the use and expansion of our national industrial capacity. Several acid rain bills pending before Congress, including S.768, would throw an unintended monkey wrench into regulatory procedures for approval of new plant construction.

Section 183(c) of the Clean Air Act, as it would be amended by S.768, would provide, with the exception of coal conversions by utility boilers under the Fuel Use Act, that "no major stationary source [within the 31-state region] which began operation before January 1, 1981 shall increase its actual rate of emissions of sulfur dioxide over that experienced by such source during calendar year 1980, unless [the source has complied with offsets requirements]." This provision and related parts of S.768 establish the so-called "cap" which is intended to prevent any increases in existing emissions.

We have strong concerns with the cap features of this bill. Our main concern is that the emissions cap will cause a ripple of severe consequences disrupting normal industrial operations and growth throughout the 31-state region.

There are three principal effects which the cap provisions may cause. An emissions cap will interfere with:

a. full utilization of existing industrial productive capacity;
b. normal flexibility in selection of fuels;
c. desired expansion of industrial capacity.

Each of these potential impacts warrants extremely careful consideration.

a. Full utilization of installed productive capacity

An even more severe, unfair, and disruptive effect of the proposed legislation would occur if it should be applied in a manner to prevent facilities from operating at full capacity, as the language of the proposed section 183(c) suggests. That language states that no source shall increase its "actual rate of emissions" over calendar year 1980 without first acquiring offsets.

Limiting emissions to historic and actual levels will restructure how emissions have been permitted and regulated under the Clean Air Act. The system will change from one which depends on the production level at which a plant is designed to operate, to one based on the production level at which a plant has actually performed over a certain period of time.

The clearest example of a regulatory miscarriage will occur if a facility which was operating only at partial capacity due to lack of demand for its production during the base year is restricted from operating at full capacity under these proposed restrictions. The result will be especially harsh if a plant has laid off workers and is prevented from rehiring them to return to normal operations. In addition, this restriction could interfere with many other types of relatively minor operating changes which may increase emissions over the base year, yet remain within allowable limits. In short, the danger that the emissions cap may preclude maximum use of existing industrial capacity must be avoided.

b. Flexibility in use of fuels

Fuel use is a fundamental component of all industrial operations. For most industrial plants, on-site fuel combustion represents a substantial operational element having air quality significance, and many such facilities are designed with flexibility to use alternate types and grades of fuel. Thus an industrial plant may have existing equipment and regulatory approval, which permits it to shift between coal and oil or between oil and natural gas, or possibly among all three, in addition to shifting between various grades of fuel with respect to their sulfur content.

Many industrial plants have "interruptible" natural gas supply agreements, even though they are permitted to burn other fuels such as oil. If the gas supplier for any reason cuts off the gas, a user must be able to switch quickly to an alternate fuel (which results in a slight increase in emissions) on short notice -- or be forced to shut down.

The effect of section 183(c) as set forth in S.768 will be to freeze patterns of fuel use on the basis of 1980 operations. That would deprive numerous industrial facilities of important elements of operating flexibility. It would impose such effects on a rigid and arbitrary basis.

An example of this problem within our membership is a refinery which after two years of environmental monitoring and negotiation received a permit allowing them to burn heavy fuel oil, fuel gas, and natural gas and to emit 0.6 lbs/mmBTU annual average. Because of the current abundant supply of natural gas and fuel gas, actual emissions dropped to 0.2 lbs/mmBTU by 1980. Should supplies of refinery fuel gas or natural gas become limited, the refinery would not be able to return to burning heavy fuel oil if it was subjected to an emissions cap based on 1980 levels, even though the current permit allows it.

A similar situation exists in a member's chemical plant. If an emissions cap is based on actual SO_2 in 1980, more than 75 percent of the plant's installed capacity would be subject to gas availability and cost. About 2500 workers could be idled if natural gas becomes unavailable.

c. Interference with industrial expansion

The effect of the emissions cap which is closest to the concerns that have traditionally troubled NEDA/CAAP is the prospect that it would further complicate the regulatory process for approving construction projects to expand industrial facilities. It appears the acid rain proposals would have the effect of establishing a 31-state nonattainment region in which any new project would require offsets. If that is the result, we believe the adverse consequences will be severe. Without question, such a policy would severely constrain the economic vitality of the entire eastern United States. It is hard to imagine that this effect was intended or that such an effect could be considered desirable.

Experience with the offsets requirements, as they have been in effect under the nonattainment provision of the Clean Air Act since 1977, has been extremely discouraging. In many instances, companies have succeeded in identifying offsets where they sought to expand an existing facility and could find offsets within that facility itself. By contrast, it has been rare that any company has succeeded in identifying and utilizing off-site offsets. With all of the publicity about offsets trading, and all of the efforts to create banks and markets, few tangible results have been realized. The need to obtain offsets to permit an industrial expansion project presents a formidable obstacle. Experience indicates that if a system of offset requirements is established on a widespread basis, it will severely curtail normal economic development.

In addition to these serious effects caused by a sulfur dioxide and nitrogen oxide emissions cap, there is another serious deficiency with S.768 and with every other acid rain proposal. That deficiency is illustrated when one examines how this new section of the law will relate to existing programs of the Clean Air Act. For instance, if an acid rain program is adopted which mandates that SO_2 emissions cannot increase, clearly PSD increments no longer make sense -- theoretically. PSD is designed to limit "significant" increases in emissions. The acid rain programs which we have seen to date will make it illegal to have any increases, let alone "significant" increases.

Sponsors of acid rain proposals including S.768 must give serious consideration to how the program will relate to and interact with other Clean Air Act programs. Failure to do so is likely to subject the regulated community to confusing and contradictory requirements.

CONCLUSION

At this point in the nation's economic development, the United States can ill afford regulatory requirements that will prevent or discourage industry from building new plants. With predictions of a fragile recovery, critical productivity boosts from new industrial facilities, increased domestic energy production, increased exports, and creation of new jobs could all be jeopardized by a process that results in little or no benefit to air quality.

The original intent of this Committee was to streamline and simplify the Clean Air Act. The difficulties with the Act are real and pressing. Unfortunately, intentionally or not, S.768 does not remedy them. It does nothing to improve the complex and costly programs of the Act. In fact, the cumulative effect is to make the law more complicated, more time-consuming, and more costly.

In addition to the problems which currently exist with the nation's clean air program, S.768's acid rain program and emissions cap threaten to lay yet another set of confusing and contradictory requirements in the path of new investment.

Robert Crandall's conclusions about the Clean Air Act and its politics confirm our point:

> "One wonders when members of Congress from the South and West will be asked by their constituents to account for the inequities that they have allowed to be built in the current Clean Air Act. Even those of us living in the northern regions should be concerned that environmental policy is so skewed against investment and growth during a period in which it is generally conceded that savings and investment are too small a share of the national income." ("Clean Air and Regional Protectionism," The Brookings Review, Fall 1983)

Many of the original concepts of the Clean Air Act were appealing. And, in fact, their general approach was correct. In practical application, however, certain features of the Clean Air Act, like increments, have evolved into a technically and administratively monstrous set of mechanisms with actual effects which bear little resemblance to the Act's original intent or any other valid social objective. They impose real burdens and costs, and produce few, if any, benefits. The Clean Air Act needs simplification. We hope that this committee will re-evaluate S.768 and meet that need.

Thank you for your attention. We will be happy to answer your questions.

APPENDIX 1

PSD

Regulation Gone Awry

John Quarles
Chairman, NEDA/CAAP

February 1982

INTRODUCTION

No feature of the Clean Air Act has attracted more criticism than its requirements to prevent the significant deterioration of air quality, known as PSD. The chief reasons for this intense criticism are:

(1) PSD represents a big regulatory hurdle for companies undertaking an industrial expansion project;

(2) The technical determinations on which PSD depends are unreliable; and

(3) Almost no one believes that the current PSD requirements produce meaningful air quality benefits.

This criticism has led to innumerable recommendations that the "Increment" feature of PSD, especially in "Class II" areas, be eliminated. A clear focus on these proposals is prevented, however, by the very complexity which is the biggest problem with the requirements. This brief outline is intended to highlight the main features of the way PSD applies, as well as its principal deficiencies.

"PSD...INVOLVES THE MOST COMPLICATED REGULATORY SCHEME EVER DEVISED."

U.S. Senator Gary Hart

HOW IT WORKS -- ELEMENTS OF PSD

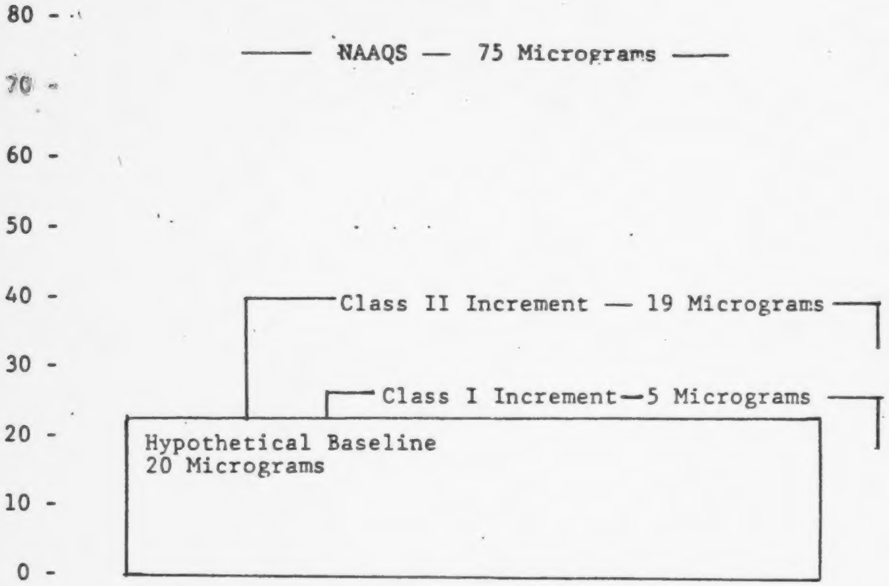
A. Where It Applies - PSD requirements apply everywhere that air quality standards are being met for any one of the criteria pollutants; if an area is classified nonattainment for one or more pollutants, new projects must satisfy the nonattainment requirements, but PSD requirements will also apply if, for other pollutants, the area is classified as attainment. Since almost no area in the country is nonattainment for all criteria pollutants, PSD in effect applies everywhere.

B. What Is Included In PSD Review - Although the term PSD is often used in reference solely to the increment requirements, PSD actually includes a total package of requirements to assure that all new industrial growth meets highest standards of air quality protection. The basic requirements include:

1. Preconstruction review - The project must be approved by government authorities before construction can begin.
2. Compliance with NAAQS - The applicant must demonstrate that the project will not cause or contribute to a violation of any national ambient air quality standard -- this assures that industrial growth cannot cause an area to violate the standards after it has achieved attainment.
3. BACT - As a basic technology standard applicable to all projects, the applicant must install the best available control technology applicable to its type of facility.
4. Increment limitations - The applicant must also demonstrate that the project will not exceed the special limitations imposed on growth by the PSD increment restrictions.

NOTE: Controversy over PSD has focused so heavily on the increment requirements that many people forget the other safeguards established under PSD. Although there is dispute over the manner by which BACT should be determined for individual projects, all major groups agree that BACT requirements should be retained in the law, in addition to the requirements for preconstruction review and demonstrated compliance with NAAQS.

PSD INCREMENT SYSTEM



NOTE: This chart illustrates the increment system for total suspended particulates (TSP). For class I areas, the maximum increase in particulate concentrations above the existing level (baseline) is 5 micrograms per cubic meter; for class II areas, 19 micrograms. However, the maximum level of particulates permitted in any area of the country is defined under the national ambient air quality standards (NAAQS) at 75 micrograms per cubic meter.

The chart indicates a hypothetical baseline of particulates of 20 micrograms per cubic meter. Thus, new sources emitting particulates would be allowed to construct in a class II area if the new source emissions and the baseline did not exceed 39 micrograms (20-microgram baseline plus the 19-microgram increment). Most areas of the country are designated as class II. In a class I area (such as wilderness areas), new sources would be allowed to construct only if particulate concentration did not exceed 25 micrograms per cubic meter.

[All numbers are for annual averages.]

C. Details of the Increment Scheme -

1. Basic concept - The basic idea of PSD is to set an upper limit or ceiling on allowable concentrations of pollutants in areas currently meeting the air quality standards by allowing only a predetermined marginal increase in concentrations over baseline conditions existing at the start of the program. The allowed marginal increases in pollutant concentrations are known as "Increments." These increment limitations are substantially tighter than the ambient air quality standards themselves. (See box on opposite page).

2. Area classification system - The stringency of the increments varies from one area to another depending upon each area's classification as Class I or Class II. Class I areas are those where special reasons exist to protect pristine air quality, including numerous national parks and other similar areas specifically designated by Congress in 1977 as Class I areas (these are the "mandatory Class I areas"). Class II areas cover virtually everywhere else, north and south, east and west -- from remote rural regions to densely populated and industrialized metropolitan areas.

   NOTE: The statute provides a complex procedure by which areas may be redesignated as Class III, to which less stringent increments would apply, but no areas have been so redesignated. Congress decreed, however, that no large national park, wilderness area, wildlife refuge, wild and scenic river, or national recreation area could be redesignated as Class III (these are the "mandatory Class II areas").

PSD AIR QUALITY INCREMENTS

Stated below are the "increments" established by the 1977 Amendments which limit the allowable increases in concentrations of pollutants in clean air areas, for each class as indicated. Most Class I increments equal roughly 2%-4% of the concentrations allowed by the NAAQS. The Class II increments equal roughly 25% of such concentrations.

	Max Allowable Increase		Primary Ambient Air Quality Standard
	Class I	Class II	
Particulate Matter			
Annual mean	5	19	75
24 hr max	10	37	260
SO_2			
Annual mean	2	20	80
24 hr max	5	91	365
3 hr max	25	512	1300

Note

All limitations are stated in micrograms per cubic meter; the 3 hr max figure for SO_2 represents the secondary standard rather than a primary standard.

3. Numerical limitations - The actual increment numbers were set by Congress in the 1977 amendments to the Clean Air Act. (See attached table). The two pollutants covered by increment limitations are sulfur dioxide and particulates. In each case limitations apply both to short-term standards and to long-term averages. The Class II increments generally represent one quarter of the concentrations allowed by the NAAQS. Class I limitations are much tighter.

4. Baseline - Whichever increment one is applying, it must be added onto the baseline, which represents the existing condition of air quality for the area in question at the outset of the PSD program. Therefore the numerical ceiling imposed under PSD will vary from one area to another, reflecting differences in the baseline.

5. Modeling - The effects of a new plant in consuming increments must be determined through modeling. Modeling is a technique of computerized calculation to estimate the dispersion of pollutants emitted from a hypothetical point above the ground and to project the increase in ground level concentrations which such emissions will cause.

6. Cumulative effect - The allowed increments, particularly in Class II areas, are intended to accommodate significant industrial growth, assuming tight controls. In most cases, therefore, consumption of the entire increment will occur, if at all, only through the cumulative effect of numerous individual projects. In determining whether each project can be permitted, it therefore is necessary to take into account the effects of all previously permitted facilities since the initiation of PSD limitations.

NAS Comments on Modeling

"Mathematical models are the only tools available for use in predicting the effects of emissions on air quality."

"Models currently being used in the PSD process are inappropriate for many of the applications intended."

"The results of modeling for short-term (3-hour and 24-hour) maxima are inherently uncertain because the maximum occurrence is a rare event."

ON PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

Report of the Committee on Prevention of
Significant Deterioration of Air Quality
of the National Research Council, 1981.

TECHNICAL PROBLEMS IN APPLYING PSD

1. Hypothetical nature of all PSD calculations - One difficulty in applying PSD is that all calculations are inherently hypothetical. The reason for this is that all calculations are based on an estimate of emissions of each facility rather than actual emissions. This creates wide discrepancies, due to differences in hours of operation, percent of capacity being utilized, type of fuel being used, and other variable factors. This means that results of computer calculations cannot be verified by monitoring actual air quality data. All errors in calculations therefore are permanent, and cumulative.

2. Baseline - The baseline usually has to be determined from scratch for each project, since monitoring data usually is not available for specific points where industrial projects are to be located. Clear ground rules do not exist to determine the "area" for which the baseline dates are triggered by first applications. If the baseline must be calculated retroactively, it will be quite unreliable.

3. Modeling - The requirements for modeling have generated intense controversy because of its scientific unreliability. Modeling is more an art than a science. It depends on numerous assumptions as to atmospheric conditions (including wind speed, wind direction, temperature, and humidity) and effects of variable terrain. Experts generally agree that modeling is accurate, at the best, only to a factor of error of 2--meaning that the actual concentrations are likely to be twice as great or half as much as those predicted by modeling.

4. Monitoring requirements - The statute currently requires all applicants to provide one year's continuous monitoring data at the proposed plant site. In fact, however, that monitoring data usually is not used in the permitting process. The irrelevance of this mandatory requirement typifies the confusion and misunderstanding which characterize the PSD increment system.

"THE PSD PROGRAM IS THE MOST BURDENSOME REQUIREMENT OF THE CLEAN AIR ACT. IT AMOUNTS TO REQUIRING COMPANIES TO MEET DOZENS OF DIFFERENT AIR QUALITY STANDARDS AT THE SAME TIME. PARADOXICALLY, COMPANIES FIND MEETING PSD REQUIREMENTS--EVEN IN AREAS WITH THE CLEANEST AIR--FAR MORE DIFFICULT THAN MEETING AIR QUALITY STANDARDS IN AREAS WITH THE DIRTIEST AIR."

U.S. Senator Gary Hart

5. Bookkeeping - As PSD increment requirements are applied over future years, their real impact will depend upon accurate bookkeeping to reflect cumulative effects. The mechanics for such bookkeeping are entirely unclear. The complexity of bookkeeping is increased by the fact that modeling of effects identifies particular hot spots for each facility, and these effects therefore cannot be combined through simple arithmetic. The prospects for accurately tracking all of the increases and decreases in pertinent emissions, as they apply to a particular point in space, over a duration of many years, seem hopeless.

6. Cost, delay, and uncertainty - Compliance with the increment requirements takes the longest, costs the most, and produces the greatest uncertainty in the entire PSD project review. Ironically, however, these calculations have the least to do with final approval of project applications, and control requirements which are almost always determined by BACT.

7. Application to small plants and modifications - Debate over PSD usually presumes application to a huge new facility at a remote location. In fact, however, most PSD applications involve small projects in developed areas, especially modifications to existing facilities. Many such projects have limited capital funding and limited time schedules. PSD increment requirements impose particularly onerous burdens on such projects.

NATIONAL COMMISSION ON AIR QUALITY

Finding #166:

> "PROJECTIONS OF DEVELOPMENT IN THE FIVE MAJOR REGIONS STUDIED BY THE COMMISSION INDICATE THAT FUTURE REGIONAL EMISSIONS ARE NOT LIKELY TO AFFECT OR BE AFFECTED BY THE PSD INCREMENTS OVER THE NEXT 10 YEARS, AND USUALLY FOR EVEN LONGER."

The National Commission on Air Quality recommended that the PSD Class II increment system be eliminated, except in national parks, wilderness areas, and other "mandatory" Class II areas. The recommendation of the staff of the NCAQ, after studying the Clean Air Act Program for three years. was that the Class II (and Class III) increments be totally eliminated.

WHY PSD INCREMENTS DO NOT BENEFIT AIR QUALITY

1. BACT is the controlling factor - In every case under PSD a project must install BACT. In nearly every case the increment restrictions add nothing.

2. Effects of rough terrain - In those odd situations where the PSD increment might impose restrictions beyond BACT, the reason usually is that the project will be located in rough terrain. A cliff or steep hill near a stack is likely to intercept an abnormally high percentage of emissions. This creates a potential "hot spot" increment violation for the source even though its emissions would not make a significant addition to atmospheric loadings in the region. It is also probable that there might be no likelihood of any persons being present at the hot spot where the increment violation would occur. This means that the increment ceilings will impose restrictions on individual plants in a capricious manner, having no direct correlation to amounts of pollution, effects on health, or any other meaningful index of air quality.

3. The relocation option - In those cases where a PSD increment might restrict an industrial project, the restriction normally could be avoided simply by relocating the project, often to a site that would not be preferable even from an air quality viewpoint. The new site could be either:

   a. A few hundred yards or a half mile away -- In this case the volume of emissions contributed to air quality in the immediate region would be identical but a different modeling analysis would permit construction-- Result: an economic penalty, and no air quality benefit; or

b. A distant location in another state -- In this case it is entirely likely that the new site might be in an area with a higher baseline of emissions and a higher population -- Result: an economic penalty, and a worse air quality impact.

4. Downward trends of air pollution - Since air quality is improving in most areas, the PSD increments are being enlarged, not consumed. In most areas the prospects of PSD affecting siting or pollution control decisions in the future will be even less than at present.

Pennsylvania DER Report

The concerns of air pollution control officials with PSD increments are well expressed by a recent report from the Pennsylvania Department of Environmental Resources:

> "...the existing prevention of significant degradation program as structured by Part C of the CAA, EPA regulations and the courts has resulted in an extremely complex, administratively cumbersome, time-consuming program that does little to protect air quality except through the de facto discouragement of new industrial facilities and the modernization of existing facilities. In fact, the program may be preventing air quality improvement because it encourages the continued operation of older, 'dirtier' plants rather than their replacement with newer, 'cleaner' plants."

THE FALLACIES OF DEFENDING PSD CLASS II INCREMENTS

Two principal arguments are repeatedly put forward in an effort to defend the PSD Class II increment system. Both of these rest on invalid foundations, as follows:

1. The need for a "Budget" - It is repeatedly urged that air quality is a limited natural resource which needs to be rationed through some form of budget mechanism. This argument does not support the present PSD increment system for two reasons:

    a. Air quality is not a vanishing resource - Pure air quality is much more analogous to a renewable resource than to a non-renewable resource. Natural cleansing atmospheric processes continuously renew a supply of clean air. More importantly, as pollution control efforts continue, the supply of good air quality is increasing, not being reduced. Clear progress is occurring in reducing emissions of particulates and sulfur dioxide, the two pollutants for which increments exist. Most industrial projects occur in industrialized areas where these improvements in air quality are occurring, making the increment regulations increasingly irrelevant.

    b. The "Budget" does not work - Essential to any budget is the ability to add up the figures and determine available resources. In PSD that can't be done. First, since the PSD increments are calculated separately for each modeled "hot spot," the available budget would differ for every square yard of ground. Second, since the modeling determinations of increment consumption are so unreliable, there is no ready method to determine what part of the increment would still remain after partial consumption by prior projects.

2. PSD increments are technology forcing - The notion is that somehow PSD increments will apply pressure for the development of better systems of pollution control. No evidence supports this claim, and it defies common sense:

    a. Distinguish use of tighter controls - In occasional cases PSD increments have required the use of tighter controls. That is not the same as developing new technology, and it has no spillover to other situations.

    b. The sequence of events - By the time a project reaches permitting stage, it is too late to develop new technology. Moreover, the companies which build new industrial plants normally do not make the pollution control equipment. PSD increments do not provide an incentive to the pollution control manufacturing industry, since PSD increments almost never apply.

    c. The real incentive - Air pollution control represents an industry of over $20 billion per year in this country. In this industry, as in any other, the simple incentive for progress is the traditional incentive -- if you can build a better mousetrap, the world will beat a path to your door.

STAPPA'S RECOMMENDATIONS
for
CHANGES TO THE CLEAN AIR ACT
February 1982

PREVENTION OF SIGNIFICANT DETERIORATION

"1. Eliminate the incremental limits for air quality degradation for Class II and Class III areas;"

OTHER GOVERNMENT POSITIONS

Elimination of Class II and Class III PSD increments has also been recommended by:

Association of Local Air Pollution Control Officials

U. S. Environmental Protection Agency

Total or substantial elimination of Class II and Class III increments has also been recommended by:

The National Association of Counties

The National Conference of State Legislatures

National Governors Association

U.S. Conference of Mayors

FUTURE PROSPECTS: THE QUAGMIRE SCENARIO

Nearly all persons who have analyzed PSD increments -- environmentalists, industry, the NCAQ, EPA, and others -- have agreed that PSD increments will have very limited effect for the near future. Even those who defend PSD Class II increments do so almost entirely on the basis of their prospective application ten or fifteen years into the future.

Yet prospects for beneficial application of PSD in the future are even more remote than in the present:

1. Escalating technical complexity - The problems of modeling to meet PSD increment requirements are difficult enough in a simple case involving only one or two plants. If one assumes the passage of time, with numerous projects gradually added, and with other sources of emissions reduced or removed, and also changes in areawide sources, the complexities of modeling become overwhelming. The inaccuracies in such modeling are multiplied geometrically, so that the determination of available increment becomes totally unreliable. There is no basis for confidence that the PSD increment scheme under such conditions will be administratively workable.

2. Improving air quality - It is almost certain that throughout most metropolitan areas, where most industrial growth will occur, air quality will be continuously improving, so that the increments are being increased not reduced.

3. No benefit, heavy burden - The net effect of these developments will produce a situation in which the PSD Class II increment scheme typically will produce no benefit. Yet it will continue to impose a heavy, and growing, technical regulatory burden. The complexity and unreliability of technical analyses will be an increasing obstacle to industrial projects with limited capital budgets and abbreviated time schedules.

   Eliminating Class II increments will reduce regulatory red tape. It will simplify the administration of the Clean Air Act. It will retain a fully effective system to protect clean air.

TESTIMONY OF WILLIAM H. MEGONNELL
DIRECTOR, LEGISLATIVE AFFAIRS (ENVIRONMENT)
EDISON ELECTRIC INSTITUTE
BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

November 17., 1983

Mr. Chairman, Committee members, ladies and gentlemen: My name is William Megonnell, and I am speaking today on behalf of the Edison Electric Institute, the nation's association of investor-owned electric utilities. I serve as EEI's Director of Legislative Affairs for environmental matters. EEI's members serve 99.1 percent of the investor-owned segment of the utility industry, and 77 percent of the nation's electricity users. My testimony today addresses the proposed Clean Air Act Amendments currently pending before this Committee.

On November 15, 1982, the Senate Committee on Environment and Public Works reported out a comprehensive package of proposed Clean Air Act Amendments.[1] The Committee bill revises three elements of the Act's stationary source provisions -- prevention of significant deterioration (PSD), visibility and interstate air pollution -- of particular concern to the utility industry, and establishes a new, rigorous sulfur dioxide (SO_2) emission control program in an effort to abate acid rain. The following testimony briefly evaluates these changes, notes the adoption of several additional amendments to Title I, and discusses significant revisions the Committee elected not to adopt.

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[1] The legislation, S.3041 in the 97th Congress, has been reintroduced by Committee Chairman Robert Stafford (R-Vt.). See S.768, reprinted at 129 Cong. Rec. S2584 (daily ed. March 10, 1983).

A. Prevention of Significant Deterioration

Despite the widespread criticisms that have been aimed at the Act's PSD provisions, in many respects S.768 leaves the program's burdensome requirements unchanged. The bill, for example, largely retains Part C's intricate increment system, despite the National Commission on Air Quality's conclusion that compliance with the increments will not significantly alter regional emissions in the foreseeable future. The legislation preserves the Class I and Class II increments intact, with only a proviso that states may attempt to "opt out" of increment coverage for non-mandatory Class II areas. The opportunity to opt out, morever, appears to lapse in the absence of affirmative action by the States within 18 months after enactment, and its exercise must be accompanied by the development of "long term air quality goals" and the creation of a preconstruction review program to assure their attainment.

The bill affords a certain degree of relief from the system by curtailing increment "tracking". Under the legislation, short-term Class II increments would no longer be consumed cumulatively; each permit applicant's impact would be measured against the entire increment. Tracking, however, and the complex accounting requirements accompanying it would still apply with respect to all Class I increments and the annual Class II increment.

The Committee bill also amends the best available control technology (BACT) provisions of Part C. Reviewing authorities conducting BACT assessments would no longer enjoy the discretion they are accorded under existing law; instead, permitting agencies would be required to identify and first consider as BACT the most stringent limits agreed to by any comparable source in the United States, and ultimately justify, publicly, any departure therefrom in issuing a PSD permit. In effect, the amendment creates a regulatory predisposition to elevate air quality considerations at the expense of the environmental, energy and economic balancing currently called for by the Act.

Studies undertaken by the National Commission on Air Quality suggest that the Committee's attempt to tighten BACT determinations may be of questionable merit. The Commission found that new sources account for a relatively insubstantial portion of nationwide emissions -- thus suggesting that, in the aggregate, distinctions between BACT alternatives may have little effect on air quality[2/]--and discovered that

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[2/] The Commission concluded that new sources (and BACT reviews) would continue to play an insubstantial role in determining emission levels "for at least the next 10 years." National Commission on Air Quality, To Breathe Clean Air 2.1-33 (1981).

permitting authorities often already require reductions beyond NSPS in establishing BACT limits.[3/]

The Committee's proposed PSD amendments also significantly expand the role visibility considerations will play in the new source review process. Under the Act, Federal Land Managers currently may seek to halt permit issuance only if emissions from a proposed facility will adversely affect visibility (or other air quality related values) within Class I areas. However, despite the clear geographic limitation imposed by the Act, visibility regulations promulgated by EPA in 1980 allow permitting authorities to consider the possibility of impairment outside Class I areas, if the potential impact involves areas designated as "integral vistas."

The Committee's amendments effectively endorse EPA's approach, even though the regulations' inclusion of integral vistas has been challenged as illegal and is under reconsideration by the Agency. The bill itself dictates which areas must be classified as integral vistas, and authorizes land managers to oppose permits if visibility within a vista

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[3/] Analyses of PSD permits by the NCAQ reflected more stringent emission limitations in 41% of the BACT determinations studied. NCAQ Report at 3.7-8. A subsequent evaluation of SO_2 and TSP limits revealed more rigorous requirements in 48% of the plants reviewed. Id. at 3.5-43.

could be impaired by emissions from a new facility. States, moreover, would be required to deny permits in response to allegations of impairment, unless the impact was deemed insignificant or permit issuance was nonetheless judged to be in the public interest.

B. Visibility

The Senate Committee bill significantly expands the geographic scope and potential source coverage of the Act's visibility program. As with the bill's PSD amendments, the revisions seek to legitimize EPA's extension of its regulatory authority to integral vistas,[4] but in the context of existing, rather than new sources. The Committee Report suggests that state sovereignty lies at the heart of the bill's visibility amendments, but in reality the legislation accords the federal government a substantial role in the regulatory process. The bill dictates which areas must be treated as integral vistas, continues to allow federal officials to determine whether visibility within vistas has been impaired, and implicitly authorizes EPA to require retrofitting on the basis of impacts within integral vistas.[5]

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[4] If Congress were to ratify the Senate Committee's identification of integral vistas, states could be forced to consider the visibility impacts of sources far removed from the pristine Class I areas the Act seeks to protect. The vistas established by the bill could conceivably affect facilities in or near major Western urban areas, including San Francisco, Southern California, Denver, Tucson, Santa Fe, Albuquerque and Seattle.

The visibility provisions adopted by the Committee remain in the package of proposed amendments (S.768) Senator Stafford has introduced, despite the opposition of Senator Hart, the visibility amendment's principal sponsor.

C. Acid Rain

During the last few years environmental groups and several senators from the Northeast have campaigned aggressively for the enactment of acid rain "controls", even though fundamental scientific uncertainties exist with respect to the efficacy of such proposals, and the cause and effect relationships on which they are based. At the urging of Maine's Senator George Mitchell, the Senate Committee acquiesced last session, and included in its proposed amendments an unprecedented sulfur dioxide (SO_2) reduction program. Under the measure, emissions in the Eastern United States must be reduced by 8,000,000 tons below

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[5] The bill allows states to override EPA-imposed retrofit requirements, but only if they are affirmatively opposed by the Governor, and then only if a veto would be in the public interest and is lodged within a "reasonable" period of time established by the Administrator.

1980 actual levels,[6] and any post-1980 net emission increases must be offset. The legislation also resurrects SO_2 SIP emission limitations which were in effect on January 1, 1981, and (regardless of subsequent SIP relaxations or consent decrees, no matter how well-founded) stipulates that sources must comply with the revived limits by December 31, 1985. Finally, the measure prohibits sources from increasing NO_x emission rates, unless offsets are secured,[7] and provides that any new source coming on line after 1994 must meet an SO_2 emission limitation equal to the lowest rate achieved by any comparable source in the region, or obtain offsets in excess of the facility's potential emissions.

The Committee's acid rain control measures will, in the aggregate, require SO_2 reductions of 10-12 million tons below projected 1995 levels, and by 1995 will impose annual costs of at least $3-8 billion. Adoption of the program, moreover, could increase consumer electric rates significantly in the Midwest and Southeast, and would create serious economic dislocation among employees of industries dependent upon viable high sulfur coal markets.

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[6] The bill's acid rain provisions, set forth principally in § 120, apply in all states east of and adjacent to the Mississippi River. In states where plans to achieve the 8,000,000 ton reduction are not devised or approved quickly enough, each utility will be required to meet a 1.2 lbs./million BTU systemwide average emission rate.

[7] Coal conversions at "coal capable" utility boilers are exempt from the moratorium.

D. Interstate Air Pollution

The interstate air pollution provisions of the Clean Air Act allow states to petition EPA to resolve disputes regarding transboundary emissions, and empower the Agency to impose additional emission controls if interstate impacts are deemed impermissible. The interstate regulatory authority accorded EPA, however, is to be exercised with restraint. Under the Act, States must accept primary responsibility for achieving applicable air quality requirements within their borders, and may only seek to shift that responsibility to a source in a neighboring state if the facility "prevents" attainment of the ambient standards or "interferes with" federal PSD or visibility requirements under Part C.

The amendments adopted by the Senate Committee would revise the Act's interstate air pollution provisions in several significant respects and, in doing so, would alter the delicate balance between state autonomy and interstate protection currently afforded by the Act.

First, the bill changes the criteria currently used in determining whether a source's interstate impacts will be judged acceptable or impermissible. The "prevention" prerequisite to regulatory action is eliminated, and in its place "interference with" attainment of the ambient standards is established as a ground for intervention. More significantly, the bill broadens the bases upon which allegations of impermissible impacts may be premised. As amended, the Act would prohibit a source from merely contributing, however slightly, to atmospheric loadings of pollutants which could "reasonably be anticipated to . . . contribute to" an adverse effect on the health, welfare or "environment" of a neighboring state. As a result, state officials seeking to blame out-of-state sources for air quality problems would be far better equipped to do so, even if the imposition of reasonable controls on in-state facilities could provide emission reductions sufficient to address air quality concerns.

The Committee bill further expands the Act's interstate regulatory authority by providing that abatement petitions may be based upon the impacts of out-of-state sources in the aggregate. In contrast, under existing law, compliance determinations are source-specific: emissions from all sources likely to affect a particular area are considered in ascertaining whether the ambient standards and PSD increments have been met, but the impacts of out-of-state sources are assessed individually in determining whether contributions to ambient levels violate the Act's interstate air pollution constraints. The Committee's aggregation approach would eliminate any need to attribute violations to individual facilities, and in doing so could subject relatively inconsequential emitters to additional controls based upon the collective impacts of all out-of-state sources.

The Senate Committee bill enhances EPA's interstate regulatory authority in at least one other significant respect. By establishing adverse impacts upon "welfare" as grounds for the exercise of interstate authority, and redefining welfare to include precipitation, the amendments effectively authorize the development of an acid rain control program wholly apart from that created by § 120 of the bill. The abatement authority, moreover, would exceed that provided by § 120 in several respects: controls would not be limited principally to SO_2, but instead could be imposed upon emissions of any pollutant capable of adversely affecting precipitation, and could be applied to sources in any state, not merely the 31 eastern states identified in § 120.

E. The Remaining Amendments Adopted By the Committee

The Senate Committee bill contains a variety of other significant amendments to Title 1, including revisions to the Act's hazardous air pollutant, nonattainment and state implementation plan provisions. In several instances, the amendments propose reforms designed to render the Act more workable, and in that respect they warrant support. Certain other revisions, however, fail to remedy serious flaws in existing law,[7] while still others create new federal regulatory requirements which appear misguided in nature.[8]

The bill's single most serious omission involves its failure to revise the Act's "percentage reduction" requirement. Under existing law, source owners must comply with the requirement by installing flue gas scrubbers at all new coal-fired powerplants, even if proposed fuel supplies will more than adequately limit potential SO_2 emissions. Ironically, the extraordinary marginal costs associated with 70-90% removal may discourage utilities from building new, cleaner, more efficient units -- thus effectively undermining the air quality benefits that plant replacement might otherwise have produced. The artificial increases in emission control costs resulting from the requirement, moreover, will raise residential, commercial and industrial electricity costs significantly. In effect, the requirement constitutes a substantial economic "bail out" for the high sulfur coal industry, under the guise of providing enhanced environmental protection. Like Section 125 (which requires the use of locally or regionally available coal), the "percentage reduction" requirement is social welfare legislation, not an air quality measure.

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[7] The amendments, for example, perpetuate current restraints on new source "bubbling" in nonattainment areas -- thus effectively discouraging source owners from replacing inefficient, higher emitting existing units with new, far more stringently controlled facilities.

[8] Section 106 of the Committee bill, for example, creates an "automatic listing" mechanism through which dozens of Congressionally-designated pollutants will be presumed hazardous, even if EPA has yet to determine whether emission reductions should be undertaken.

F. Conclusion

Congress' ongoing evaluation of the Clean Air Act provides both Houses with a valuable opportunity to assess the success of each regulatory program the Act has established. In particular, the process enables legislators to determine whether individual programs have produced significant environmental benefits, and if so, whether the benefits have been roughly commensurate with the accompanying costs the nation's consumers, ratepayers, workers and shareholders have been forced to bear.

Viewed in light of this opportunity for reexamination, the Senate Committee bill constitutes a fundamentally inadequate vehicle for meaningful reform. In effect, the legislation fails to distinguish between those parts of the Act which command widespread support (*e.g.*, the primary ambient standards), and those provisions which many commentators agree need to be fundamentally restructured (e.g., the PSD increments). As a result, the amendments which emerged from the Committee last session tend to treat all of the Act's regulatory requirements with the deference that should be reserved for the statute's "core" provisions.

The flaws in the bill arising from its omissions are compounded by the legislation's adoption of new, unduly burdensome regulatory requirements. In several instances--notably with respect to acid deposition, interstate air pollution and hazardous air pollutants--the Committee has reacted to perceived "deficiencies" in the Act by creating aggressive regulatory programs wholly out of proportion to the concerns which initially prompted the revisions. The Committee's three amendments, moreover, threaten to cause divisive friction between the states, ignore scientific evidence which argues against their adoption, and invest Congress with decisionmaking authority, regarding complex technical issues, best reserved for an expert administrative agency.

TESTIMONY ON BEHALF OF
THE NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

NOVEMBER 17, 1983

My name is Rae Cronmiller, Environmental Counsel, for the National Rural Electric Cooperative Association (NRECA), located here in Washington, D.C.

This testimony is presented on behalf of NRECA which is the national service organization for the rural electric systems. We appreciate this opportunity to comment on issues related to the Clean Air Act. NRECA represents over 1000 non-profit consumer-owned electric systems located in 46 states and in 2600 of 3100 counties within the United States. These consumer-owned electric systems deliver electric power to over 25 million rural Americans who consume about 10 percent of the nation's total electric power generation. Approximately 50 rural electric cooperatives generate an estimated 40 percent of the power rural electric systems distribute, which means about 60 percent is purchased from other utility sectors.

Rural Americans have appreciated, enjoyed, and realized the importance of a clean environment long before the creation of the original Clean Air Act (CAA). Accordingly, as an association representing rural Americans, NRECA wholly supports the objectives of the CAA. In the practical sense, some provisions of the CAA have proven to be ineffective in accomplishing clean air goals, while costing the electric cooperatives vast sums of money. NRECA, therefore, recommends that the CAA be amended to reflect more reasonable, rational and cost-effective programs to achieve CAA objectives.

Several provisions in S. 768 would be beneficial, and thus should be incorporated into the existing CAA. Section 301 would amend the CAA §307(b)(1) to give jurisdiction to any United States Court of Appeals for a circuit in which the petitioner resides or transacts business, for reviewing petitions addressing national issues. This amendment would prevent undue costs and inconvenience to parties who without this provision must file actions in the District of Columbia, although they do not reside or do business there. Section 302 would amend the CAA §304(d) and §307(f) to limit judicial discretion to award litigation fees only to parties who prevail or substantially prevail. Restricting the awardance of fees in this manner would help prevent unnecessary litigation and delays due to parties seeking only impedance of the regulatory processes or other activities comprehended by the CAA. Section 105 would restrict new sources complying with the best available control technology (BACT) from retrofitting newer equipment for a period of 10 years for the purpose of meeting a more strict emissions limitation requirement than originally required. The concept of assuring that new facilities employing BACT at the time of initial permitting would not be required to incur additional, large expenditures for equipment retrofits is reasonable and commendable. Unfortunately, this proposal does not go far enough. The time prohibition should be equal to the life of the plant. New sources utilizing BACT have the most effective air pollution control equipment in the world, and the marginal benefits achieved by requiring retrofitting anytime during the life of a plant are not justified by the costs involved to do such.

In contrast, there are other provisions in S. 768 which would do little, if anything, to improve or maintain our nation's air quality, but would add more complexity and impracticality to the CAA -- at great expense to the cooperatives. We recommend the following revisions to S. 768, as provisions therein would amend the CAA, and to the CAA in general.

Section 110 of S. 768 Which Would Add a New Provision to §169(3)(B) to the CAA Requiring Consideration of the Most Stringent Regional Emission Limitation for Determining New Source BACT Should Be Deleted

This proposed CAA amendment would incorporate yet another ratchet mechanism into best available control technology (BACT) determinations for certain new sources. Its implementation would have little if any effect on prevention of significant deterioration (PSD) areas, but it would be extremely expensive and impractical. Permitting authorities required to establish BACT for new sources would have to give deference to not only the lowest emissions actually achieved, but also to the most stringent emissions levels required in a permit anywhere in the region.

Extreme impracticalities would ensue under this proposal. BACT emissions levels would be determined based on standards never achieved in practice, standards which may not be achievable. BACT levels would be set based on remarkably low emission levels achieved by other sources, sources operating under substantially different conditions, using fuel having substantially different characteristics. Inevitably, at least some permittees receiving BACT standards under these criteria would incur large, unnecessary expenses attempting to achieve an emissions goal that cannot practically be met.

Existing provision §169(3) of the CAA already specifies a scheme of determining BACT. In a relative sense, the present program has proven to be realistic and effective in protecting PSD areas. Therefore to avoid an additional and unworkable provision, Section 110 regarding additional BACT considerations should be deleted from S. 768.

The Mandatory Integral Vistas Program of S. 768 Section 12 Should be Deleted

Under the present CAA, a state has discretion to develop regulations protecting visibility of areas outside national parks that are part of integral vistas as viewed from inside national parks. Section 112 proposals would incorporate a list of integral vistas, as determined by a Federal agency, into the CAA, thus mandating a permanent Federal program, resulting in usurpation of state and local authority to provide input into local visibility determinations.

The integral vistas concept has been, to say the least, controversial. Efforts to cast the entire responsibility of the integral vistas program on the Federal Government would only aggravate the problem because a state's right to determine public interest policies regarding local land use and economic development would be emasculated.

A state should continue to have opportunity for real input into policies concerning commercial and industrial development of lands and visibility of areas within its boundaries and outside of the national park system. Therefore, the mandatory integral vistas program of Section 112 should be deleted.

The Short Term Increments in the CAA §163(b)(1) For Class I Areas Should be Deleted

The three and twenty four hour (short term) increments contained in the existing PSD program provide an extremely complex and impractical scheme causing major problems in PSD implementation.

The effect an emissions source will have on ambient air quality and on the maximum allowable ambient pollutant level (increment) is determined by using mathematical models. Available models are inherently unreliable and imprecise. Moreover models for short term increments or short term allowable pollutant levels are not sufficiently developed, thus it is impossible to evaluate an emissions effect on short term increments. Difficulties with this system are evidenced by excessive permitting delays and the refusal of all but a few states to accept PSD permitting authority from the Environmental Protection Agency.

The air quality in pristine Class I areas should, obviously, be protected. Experience has shown the annual increment system to be reliable and, therefore, should be utilized as the sole criterion for guaranteeing accomplishment of Class I objectives. To administer a workable program, short term increments pertaining to Class I should be deleted.

Section 121 of S. 768 Amending the CAA §110(a)(2)(E) Should be Substantially Revised

S. 768 Section 121 would mandate state implementation plans (SIPS) contain requirements prohibiting a source within the state from emitting any air pollutant in amounts ... "which may reasonably be anticipated to cause or contribute to an adverse effect on public health or welfare or the environment in any other state" ...(emphasis added).

This proposal is obviously aimed at preventing interstate pollution, a problem which the CAA needs to properly address. Requirements contained in Section 121, however, are too vague and, therefore, will force the states to address sources having only the most trivial impact on another state's air quality. For example, an in-state source contributing even one microgram-per-cubic meter of a pollutant to the ambient air of another state could be said to be adversely affecting the other state's environment under an objective reading of Section 121. To give this proposal more practical meaning, the words substantially contributing to or words to that effect should be added in lieu of contribute to in Section 121.

The Criteria for Good Engineering Practice For Allowable Stack Heights in the CAA Section 123 Should be Amended to Include Plume Impact and Terrain Obstacle Considerations

Section 123 specifies criteria for the maximum allowable stack height to be used for determining emissions limitations of pollutants emitted from a stack. To prevent construction of tall stacks solely for the purpose of dispersing pollutants, when calculating allowable emissions, a stack's height can be no taller than that required by good engineering practice (GEP), as defined in Section 123.

On a practical basis, however, the GEP definition is not adequate because stack heights actually required in some areas having nearby terrain obstacles exceed that allowed by Section 123 GEP. In other words, in some instances the actual stack height required by using common sense in combination with sound engineering principles exceeds that allowed by Section 123. To correct this inequity, the GEP definition should be expanded to include considerations of air pollutant concentrations in the plume impact area as a result of terrain obstacles and the Section 123 statutory presumption of a maximum GEP stack height of two and one half times the height of the source should be revised to include considerations for the height of any nearby terrain obstacle.

The Percentage Reduction Requirement For New Sources Should be Deleted from the CAA

The percentage reduction emission limitation requirement through the application of best technological system of continuous emission reduction for fossil fuel-fired electric generation power plants should be eliminated. Instead, sources should be allowed to employ any method, including the burning of low sulfur fuel, to meet emissions limitations.

Congress established the percentage reduction requirement to avoid market dislocation of high sulfur eastern and mid-western coals. The cooperatives have a high regard for maintaining economic prosperity and full employment regarding the various high sulfur coal concerns. However, on a practical basis, the percentage reduction requirement accomplishes virtually nothing toward accomplishing CAA goals, while costing the cooperatives in the West and those having easy access to low sulfur fuels in the East billions of dollars. Moreover, due to high transportation costs of western low sulfur coal, most of the eastern cooperatives would continue to use high sulfur coal in combination with flue gas disulfurization (FGD) units anyway. If the percentage reduction requirement were eliminated, however, a major cost benefit would occur because FGD units would not be mandatory for western generation units and some eastern stations could burn readily accessible eastern low sulfur coal without FGD as well.

Also rapidly emerging technologies such as limestone injection multi-stage burning (LIMB) and fluidized bed combustion (FBC) should, by 1990, ensure economical high sulfur coal combustion producing low sulfur emissions without utilizing expensive flue gas pollution control equipment. This relatively inexpensive, pollution free coal combustion would generally moot considerations of transporting coal, low sulfur coal, great distances to supply future power plants.

For these reasons, the cooperatives view rationale for percentage reduction as passé, and urge the deletion of this requirement from Section 111 of the CAA.

S. 768 Section 120 Which Would Add PART E to the CAA Requiring an 8 Million Ton Annual Sulfur Dioxide Emissions Reduction Below 1980 Actual Levels Should be Deleted

First we are extremely concerned about any pollution adversely affecting the public health or welfare, and this concern extends to pollution damaging our natural environment as well. Also, we are not oblivious to contentions that sulfur dioxide (SO_2) emissions from man-made sources are causing serious problems in some areas. But we are skeptical of blanket solutions for a problem which thus far cannot be scientifically defined, blanket solutions which would cost people in this country billions and billions of dollars.

To put this nation on a rational, reasonable course toward alleviating worries about SO_2 environmental damage, Congress should immediately enact S. 454 which would accelerate ongoing study and S. 1925 which would establish a national program developing effective clean coal combustion techniques. We hereby go on record as specifically endorsing and supporting these bills.

Regarding the proposed CAA PART E, presumably this emissions reductions scheme is based on two assumptions: (1) We know enough to invoke on intelligent and at least somewhat cost-effective scheme to substantially alleviate not only acidic deposition, but also whatever problems it is causing to our lakes, forests, agricultural products, and man-made structures, and (2) Currently this nation has no energy and environmental policy which will lead to solutions of whatever problems exist.

The notion that this nation lacks an effective policy for evaluating the problem and identifying causes thereof is clearly erroneous. In 1980 Congress enacted P.L. 96-294, the Acid Precipitation Study Program for the express purposes of identifying the causes and sources of acidic deposition; evaluating the environmental, social and economic effects of acidic deposition; and based on results obtained, taking action to limit or eliminate identified emissions which cause the problem and to remedy or otherwise ameliorate harmful effects of acidic deposition. This country, therefore, has a program directed toward evaluating the many economic and scientific aspects of the acidic deposition problem.

Further, several other programs are also underway for the same purpose--finding a solution to and scientifically identifying whatever problems exist. Among these are the extensive projects of the Electric Power Research Institute (EPRI), of which the cooperatives are members as are a vast number of other electric utilities throughout the country. EPRI has spent at least as much as that spent on the National Acid Precipitation Program thus far and will continue to spend many more millions of dollars to identify and find solutions to the problem.

Now that intense research has been underway for several years, do we have sufficient knowledge to enact a rational scheme to solve or substantially alleviate the problem? The 1982 report on the status of the National Program, besides stating that the environmental effects of acidic deposition are largely unknown, concluded that:

> Current data and available methods, however, are not sufficient to quantify relationships between pollutant emissions and acid deposition on a regional scale, or under varying conditions. Nor is it yet possible to identify the specific charge in acid deposition patterns that would result from a given change in precursor emissions.

Stated differently, current scientific knowledge is not adequate to develop an acidic deposition control program, including the emissions reduction scheme in S. 768 or any other bill, with any assurance that it would solve or even alleviate whatever problems exist.

Specifically, the electric cooperatives are extremely concerned about costs of the experimental acidic deposition control scheme in S. 768. The cooperatives.

which own and operate approximately 20 percent of the flue gas desulfurization units (scrubbers) existing in the country while producing only about 6 percent of this nation's coal-fired electric generation, would incur direct expenditures in the billions of dollars in complying with the S. 768 program.

The position of the electric cooperatives is not that reductions in man-made pollutants, sulfur dioxide and nitrogen oxides in particular, will not be necessary, but presently any scheme of emissions reductions amounts to nothing more than a grand experiment. Further, when scientific research reveals solutions to whatever problems exist, the cooperatives would be among the first to respond, if they are related to the problem.

In short, in view of the absolute uncertainty regarding any beneficial results and the vast costs involved in this experiment, we recommend eliminating the acidic deposition control scheme, PART E, from S. 768. Alternatively, if Congress is intent on enacting such a multibillion dollar experiment, 100 percent financing for the scheme should come from the Federal Government.

To summarize, S. 768 and the CAA should be amended and revised to conform to recommendations expressed in the body of this testimony. Suggested changes in S. 768 that are particularly important are: (1) the elimination of the consideration that lowest emissions specified in any permit or actually achieved in practice be used to determine BACT for new sources, (2) the additional SIP requirement that states control emissions that contribute to interstate pollution be amended to read substantially contribute, and (3) the elimination of the 8 million ton SO_2 emissions reductions scheme because it is not scientifically justified.

STATEMENT

OF THE

AMERICAN PETROLEUM INSTITUTE

PRESENTED BY

RICHARD W. KREUTZEN

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

Washington, D.C.
November 17, 1983

Statement on Behalf of the American Petroleum Institute presented by Richard W. Kreutzen before the Senate Committee on Environment and Public Works, Washington, D.C., November 17, 1983.

My name is Richard W. Kreutzen, General Manager of Environmental Affairs for Chevron USA, the domestic operating arm of the Standard Oil Company of California. However, it is on behalf of the American Petroleum Institute, of which Chevron is a member, that I am testifying today.

API welcomes this opportunity to present its views on S. 768. The petroleum industry, day in and day out, supplies almost three-fourths of the nation's fuel. The Clean Air Act significantly affects our operations from the time oil is pumped from the ground to the time it is put into the gas tank. Today I hope to contribute to the Committee's understanding regarding some of the difficulties that we are experiencing under the present Act. I would also like to suggest changes that the Institute is convinced are necessary if the nation is to achieve the goals not only of clean air, but also of national security, adequate energy supplies, a sound economy, and reasonable industrial growth.

We know much more about air pollution causes and effects than we did when the Clean Air Act was passed in 1970 and amended in 1977. Since then, air quality has been dramatically improved. For example:

- Man-made emissions of particulate matter (dust, soot, etc.) decreased approximately 55 percent between 1970 and 1980 due to the control of industrial emissions.(1)
- Average sulfur dioxide levels in urban areas decreased 24 percent from 1974 to 1980. Estimated sulfur oxide emissions declined approximately 15 percent from 1970 to 1980; the 15 percent reduction in emissions has been achieved even though the amount of fossil fuels burned increased by 10 percent since 1970.(2)
- Average lead levels in the air decreased 54 percent between 1974 and 1980; lead consumed in gasoline decreased 62 percent.(3)
- Automobiles produced in 1980 emitted 90 percent less hydrocarbon and carbon monoxide and 75 percent less nitrogen oxide than models produced in the 1960s.(4)

The petroleum industry itself, in responding to environmental concerns and regulations, invested over $28 billion in air, water and land environmental improvements and research from 1973 through 1982.(5) More than $15 billion of this amount, or 53% of our environmental expenditures, was spent on air pollution control. Examples of the industry's progress include:

- reductions in emissions and odors at refineries through installation of new equipment and procedures;
- development of improved technology to produce large quantities of low-sulfur heating oil and residual fuel oil;

It is readily apparent that effective air pollution control strategies are in place. We are moving toward the goal of a cleaner environment. However, the nation is now at a critical point in the development of energy sources for the future. The American public can experience continued environmental progress and have the additional domestic energy it needs only if government modifies its environmental policies.

The American Petroleum Institute believes that S. 768 would improve the Clean Air Act in several ways. However, there are other sections of the bill which we feel would only add to the complexity of the present Act without significantly improving air quality. We address these issues in the order in which they appear in the bill. Section numbers on the left side of the page refer to the relevant section in S. 768. Section numbers to the right refer to the corresponding section of the Clean Air Act.

S. 768	Clean Air Act
Section 103	Section 109(b)(2)

The deletion of "any" in Section 109(b)(2) by Section 103 is a very sensible change. API commends the Committee for explicitly recognizing that minute but detectable adverse effects could require a stringency, when setting secondary ambient air quality standards, that is far beyond any reasonable public welfare benefit. This could be very costly to control, in terms of resources other than clean air.

Section 105	Section 111

Cogeneration facilities and industrial boilers should be exempted from the percentage reduction requirement. Unless the Clean Air Act is amended, EPA must extend the percentage reduction regulations to cogeneration facilities and industrial boilers. This would require all new industrial boilers to be equipped with expensive flue gas desulfurization systems at considerable cost to owners. These requirements unduly retard the replacement of inefficient boilers at a time when our energy objective should accelerate this process.

Sections 105, 121	Sections 110, 123, 126, 302, 304

Several provisions of S. 768 place a greater emphasis on interstate pollution. For example, Section 105(c) would delete "within the state" as the benchmark for permitting and enforcement under Section 110(a)(4) of the Act. In addition, Section 121 would delete the term "prevent" as it applies to National Ambient Air Quality Standards attainment in favor of the much vaguer term "interfere," and add a prohibition against contributing "to atmospheric loadings of pollutants or their transformation products which may reasonably be anticipated to cause or contribute to an adverse effect on public health or welfare or the environment in any other State or foreign country."

In similar fashion, Section 121 would also make "emissions of an air pollutant which, by itself or in combination, reaction, or transformation adversely affects the public health or welfare of another State" a violation of Section 126, the Act's existing interstate pollution sections. Finally, Section 121 would expand the concept of welfare to include effects "whether caused by transformation, conversion, or combination with other air pollutants."

API's basic objection to these provisions is that they are unduly vague; and their relationship to existing national standards (i.e., NAAQS, NSPS, NESHAPS) is unclear and they obscure the ongoing scientific debate surrounding a constellation of highly complex issues. Moreover, if these broad sections were enacted, there would be no reason to enact the much more specific, tailored provisions of Sections 180-187 regarding interstate transport and acid precursor reduction.

Moreover, API especially opposes provisions making such general standards directly applicable to sources. At the very least, inclusion of these benchmarks would exacerbate an already complex and time-consuming permitting process. Furthermore, to also allow Section 304 citizen suits to enforce such general prohibitions directly against sources would invite abusive, open-ended litigation. In effect, every person becomes a potential enforcer, duplicating the work of the Administrator in an area with only the most vague legal standards and thinnest factual bases. For example, someone could bring suit to enforce against sources in other states unrealistic (and revisable) goals in a state's long-term prevention of significant deterioration classification plan. Most outrageous would be the unilateral ability of foreign countries to enforce health, welfare, or environmental requirements without reciprocity.

Section 106 Sections 112, 122

EPA should recognize and implement the flexibility inherent in the Clean Air Act for regulating potentially hazardous air pollutants under Title I of the Act. Title I provides an adequate basis for developing an overall regulatory program for specific substances that is cost-effective in the sense that it is aimed at those facilities, and requires only that degree of control needed to eliminate significant risks.

EPA should revise its regulatory policy to provide that it will engage in a careful analysis of risk prior to listing, including scientific review and an opportunity for public comment. This analysis should focus on the magnitude of risk presented by sources of a substance that may be regulated. Any listing decisions should call for regulation of only those source categories that present a significant risk. EPA should consider regulatory options under Sections 108-110, 111, and 112, and select the regulatory course that is best-suited to the control of emissions of the substances in question.

We note that EPA appears to be moving in the right direction, as witness the November 7, 1983, statement of William Ruckelshaus before the House Subcommittee on Oversight and Investigations.

API opposes most of the provisions of S. 768 which would amend Section 112 and 122. Substituting "adequate" for "ample" as a test for margin of safety is a step in the right direction. But Section 112(b)(1)(B)(ii) should be modified further to read as follows:

> "The Administrator shall determine whether such emission standard is adequate to protect the public health from significant risk...."

If Section 112 of the Act were so amended, this explicitly would allow the Administrator discretion to establish emission standards that are adequately protective of public health yet not unnecessarily stringent.

Additionally, there is a requirement that at a minimum the Administrator should establish emission standards that represent BACT before there is a finding of need. This should be redirected to require that controls be consistent with the determination of the level of risk. The requirement should be eliminated that any "emission standard established under this clause shall be at least as stringent as the most stringent emission limitation shown by an adequate operating history to have been achieved in practice by a source of the same class or category" because it would unnecessarily restrict administrative choices that are available to balance the proper level of control with the risk.

API opposes the proposed revisions to Section 122 because they do not represent wise public health policy. The problem is the unnecessary restriction on the Administrator's discretion. For instance, in proposed Section 122(d)(1)(B)(ii), the Administrator would be required to include on the list of hazardous air pollutants any substances "for which the Agency possesses positive data from one or more tests indicating carcinogenicity in humans or other mammals." This provision would allow such mutagenicity assays as mouse lymphoma, sister chromatid exchange, and DNA repair to require listing because a positive response "indicates" carcinogenicity, even though the correspondence between a positive finding of mutagenicity and carcinogenic potential may not be correlated.

The provisions which require automatic listing of 20 substances unless decisions are forthcoming within two years (and another 20 substances within five years), overloads the Agency's evaluation system. This could overwhelm its ability to make a measured decision on whether to declare a substance a hazardous air pollutant. This is compounded by the "rush to judgment" inherent in new Section 122(d)(5)(A) as proposed by S. 768. The relief of 180 days provided by the petition process is insufficient compared to the work involved, particularly since the failure of EPA to act within such time constraint would not be a non-discretionary duty enforceable under Section 304(a)(2) of the Act.

Because Section 101(14)(E) of the Comprehensive Environmental Response, Compensation and Liability Act considers a substance to be hazardous if it is listed under Section 112 of the Clean Air Act, the disclaimer in new section 122(d)(5)(B) is flawed.

Section 106(b) of the bill removes some desirable regulatory flexibility from the existing Act by removing the phrase "for which he intends to establish an emission standard under this section."

API suggests that EPA's record of delayed action under Section 112, under all previous EPA administrators, does not represent recalcitrance but rather the extreme difficulty in promulgating hazardous air pollutant regulations for substances coupled with the failure to utilize imaginatively all the regulatory options under the act. These amendments will overload the schedule and force bad decisions in the name of protecting public health. In addition, if the Administrator does nothing, the substances on the list become hazardous air pollutants by default, irrespective of health evidence.

There is no provision requiring the Administrator to make an objective analysis. This can best be achieved by allowing public participation in the listing process and requiring Science Advisory Board review of, or participation in, the listing process.

Section 110 Sections 163, 164, 165

Some of the most important issues in S. 768 are restrictions for "prevention of significant deterioration" (PSD) in Mandatory Class I areas. Class I increments are not changed in S. 768. These Class I increments, particularly the short-term ones, are an unduly stringent restriction on energy development. The technical basis for determining Class I increment consumption is not sound. The Committee recognized modeling difficulties and uncertainties when discussing Class II increments in Report No. 97-666 in eliminating tracking for those increments. Of course, the problems are of much greater dimension for Class I increments.

Studies undertaken for API indicate that the range and uncertainty in the prediction of Class I increment consumption by most EPA approved air quality models is larger than the Class I increment. Furthermore, the models usually overpredict increment consumption.

Even though Class I areas have unique national value, there should be a more realistic process to balance this value with other important national objectives. An additional air quality review would be an especially appropriate means to strike this important balance. Congress should identify those specific areas that have unique scenic value and require that this balance with other national goals.

With respect to Class II increments, S. 768 goes in the right direction but does not go far enough. The states, rather than the federal government, should have the option to decide whether an increment system is necessary or desirable for nonmandatory Class II areas. The classification plan now included in Section 110(c) does not allow for this "opt in" system. Rather, it allows the states to "opt out" - that is, to designate nonmandatory Class II areas which will not be subject to the increments.

Furthermore, this section is unrealistic in that it requires the states to submit a classification plan as part of a SIP revision within 18 months of enactment. Most states do not have the resources to accomplish that mandate in so short a time. If the states fail to submit a plan, then EPA will have to adopt a classification plan for each state.

The PSD increment program should not be extended to include Set II pollutants (ozone, carbon monoxide, nitrogen oxides, and lead). The existing PSD permit requirements require BACT and air quality analyses for these pollutants. We believe that these requirements, coupled with efforts to reduce mobile source emissions, would be sufficient to protect attainment areas.

API supports Section 110(d)(13) which would delete the requirement for one year of continuous air quality monitoring. We would also favor allowing individual states discretion in determining the monitoring required as part of the preconstruction permit process.

Section 112 Section 169(A)

API agrees with the clarification in Section 112(a)(1) that the purpose of visibility protection for Federal Class I areas is to prevent significant impairment of visibility -- not all impairment detectable by modern scientific instruments.

Section 112 of the bill specifies the requirements for issuance of a permit for a facility which could cause or contribute to significant visibility impairment in an integral vista. However, the real problem is that the integral vista concept unreasonably extends the boundaries of Class I areas. As an example, consider the 360° integral vista from Mt. Lassen. (The Class I area is 105,000 acres -- 165 square miles.) If the integral vista extends to Mt. Shasta, about 100 miles away, the area included by this 360° integral vista is roughly 31,000 square miles, an area 190 times as large as the Class I area.

Since there is no guidance as to the extent of the integral vista, this could result in limiting or stopping projects which would otherwise meet all of the already onerous PSD preconstruction requirements. We do not believe Congress intended this when it added Section 169(A). Accordingly, we believe the integral vista concept is beyond the existing statute and has no place in an amended statute.

There is no need to impose additional requirements and controls beyond those already required for Class I increment consumption by PSD review. As pointed out earlier, air quality models approved by EPA to determine the impact of sources on Class I areas are very conservative. That is, they greatly overestimate the increment consumption of a source.

The requirements for an analysis of the impact of a facility on soils and vegetation should be removed because the allowed PSD increments are so small that no impact on those entities could be expected, or even detected if they occurred.

Section 114 Section 171(3)

API supports the Committee's recognition that BACT should be utilized in place of lowest achievable emission rate (LAER). API further supports the BACT definition contained in Section 171(3)(A) and (B). We are concerned, however, that the additional paragraphs (C), (D), and (E), of Section 171(3) make the definition unnecessarily complicated. These last three paragraphs serve no useful purpose and most likely will lead to controversy. This BACT definition should be the same as the BACT definition found under PSD Section 169(3).

Section 115 Section 171(5)

The "dual source" definition should be deleted. Major sources should be defined consistently throughout the Act. If the dual source definition must stay, it should apply only for the limited purposes of BACT review determinations.

S. 768 does not require that redesignation be carried out on a specific schedule. We believe that redesignation, as described in Section 107(d)(1), should be conducted every three years until attainment of the applicable standard is achieved. The redesignation should be submitted as a SIP revision and should be such that only those regions or portions of regions which are actually deemed nonattainment through actual monitor readings would be classified nonattainment.

Section 116 Section 110(a)(2)(I)

The construction ban should be discretionary because it:

a. paralyzes expansion of those sources already meeting regulatory requirements,

b. rewards sources contemplating expansion which are less tightly-controlled because they have offsets (under the two-for-one offset proposal), and

c. further impedes progress toward attainment by preventing the construction of new and modified cleaner facilities.

The ban should be applied only to those areas where a State fails to adopt required SIP revisions, or when the Administrator makes a finding that an approved plan is not being implemented. Any major new or modified source which shows a net air quality benefit should be excluded from the ban.

Finally, the provision in Section 116 is unrealistic which allows a source to avoid the construction ban by providing twice the amount of offsets as normally required by Section 117(a)(1)(A). As stated in our comments on Section 117, certain areas lack offsets. Yet it is in these areas that replacement of older, more polluting sources with newer, cleaner sources will have the greatest effect on attaining the standards.

Section 117 Section 172

S. 768 sets up an elaborate set of procedures for extension of the attainment dates. However, all of these provisions require attainment by 1992 for criteria pollutants. While we support attainment of the standards in the most expeditious manner, the 1992 date is unrealistic for certain areas of the nation. A prime example is Los Angeles. It has the most far-reaching and stringent stationary source requirements in the nation, and yet its 1982 SIP revision does not project attainment of the ozone standard until the 21st century. Even under the provisions in Section 117 (as well as in Section 116 as explained above), a construction ban would remain in effect. This will hinder improvement of air quality by prohibiting replacement or modernization of older sources with newer, more energy-efficient sources having better pollution control equipment. S. 768 should recognize this situation and others like it and allow case-by-case deadline extensions at the Administrator's discretion.

Section 117 does provide some alternatives to offsets, and therefore a way out of the ban. API supports this, but we would like to point out that a lack of offsets can still restrict construction in some areas. Participants at an EPA-sponsored meeting on emission trading, held in Los Angeles in August 1982, reached the following conclusions:

1. There are few, if any, available offsets which can be traded in the Los Angeles Basin.

2. Facilities in Los Angeles are running out of offsets for their own internal use.

Section 118

S. 768 establishes conditions under which an "allowance" may be made for pollutants in nonattainment areas. The bill also introduces the idea of an energy-economic balance. Both of these moves are positive steps.

Section 120 Title I

API opposes Section 120 of S. 768 in its present form. While we believe that acid deposition does occur in some parts of the nation, the proposed reductions of sulfur dioxide and nitrogen oxides may not produce the desired effects. Acid formation is a very complex process, occurring both in air and on the ground. Increased controls will result in the generation of quantities of solid waste from scrubbers. The acid rain provision totally ignores this serious environmental problem. Future legislation should consider the solid waste problems associated with emission control systems.

Implementing controls according to the timetable in S. 768 renders useless the studies being conducted under the Acid Precipitation Act of 1980 and those proposed research and special studies in the new Section 182 established by Section 120 of S. 768. API encourages removal of all references to acid rain control. Rather, Section 182 should be enacted, which will provide money for an accelerated acid rain research program.

The petroleum industry is itself presently involved in acid rain research. As part of a coordinated effort with the Interagency Task Force, API helped fund an "Inventory of Private Sector Research on Acid Rain." We have also approved a study, to be published shortly, entitled "Acid Rain-Related Reconnaissance of Water, Rock, Soil and Sediment Chemistry in the Adirondacks."

Section 205 Section 202

This section imposes a 0.05 weight-percent sulfur limit on diesel fuel when diesel-powered vehicles make up 10 percent of the total annual sales of autos and light trucks.

This proposal is not a cost-effective way to limit ambient sulfur dioxide concentrations. Increased cost for diesel fuel estimated by the state of California, compared with the number of tons removed as estimated by the Office of Technology Assessment (given in the Committee report), represents a large cost for a small removal. Most of the cost will be for increased sulfur removal equipment in refineries. This will require construction permits which are difficult to obtain and large amounts of capital.

Section 208 Section 211(g)(2)

This section regulates lead in gasoline at levels achieved during the quarter ending June 30, 1982. Recent EPA regulations have already taken care of the need for amendments in Section 208 modifying Clean Air Act Section 211(g)(2). Therefore, it should be dropped.

Section 301 Section 307(b)(1)

We support the filing of petitions for review of nationally-applicable actions of the Administrator in Courts of Appeal other than the Court of Appeals for the District of Columbia, because exclusive review of Agency actions in the D.C. Circuit is neither necessary nor desirable.

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1. Council on Environmental Quality, Executive Office of the President, Environmental Quality 1981: 12th Annual Report of the Council on Environmental Quality (Washington, D.C., 1981), p. 25.

2. Ibid., p. 26.

3. Ibid., p. 30.

4. Ibid., p. 11.

5. American Petroleum Institute, Environmental Expenditures of the United States Petroleum Industry, 1973-1982, Publication No. 4368 (Washington, D.C., 1983), p. 1.

STATEMENT OF THE WESTERN REGIONAL COUNCIL

Presented By

W. P. SCHMECHEL

Before the

SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

November 17, 1983

I am Paul Schmechel, President and Chief Executive Officer of The Montana Power Company. I appear before you today on behalf of the Western Regional Council regarding S. 768, the Clean Air Act Amendments of 1983.

The Western Regional Council is a coalition of 46 major companies active in the eight Rocky Mountain States. Our membership includes businesses engaged in financial, energy, mining, transportation, manufacturing and other enterprises.

The purpose of the WRC is to provide a forum for the resolution of issues which uniquely affect the business community in our region and to recommend policies to State and Federal governments which recognize the need for both a vigorous economy and a healthy environment in which to live.

Since it was organized in 1977, the WRC has been actively interested in clean air issues and ramifications of the Clean Air Act. We have worked with both the Congress and the Administration on those clean air issues we believe uniquely impact the West. We appreciate this opportunity to appear before the Committee and to express our views on S. 768.

The WRC supports efforts to reauthorize and amend the Clean Air Act and hopes for action in the 98th Congress. As business people who live and work in the West, we support the intent of the Clean Air Act and what it can mean for the western quality of life. We therefore advocate stringent protection of our pristine Class I areas, National Parks and Wilderness areas. While we support aspects of S. 768, we are concerned with certain provisions in the Clean Air Act and in S. 768 which we believe go beyond prudent efforts to improve air quality and cause unnecessary adverse economic impacts.

The WRC is primarily concerned with those sections of S. 768 which we feel uniquely affect the Rocky Mountain Region. We will largely confine our remarks to those sections. They include Sec. 107. Primary Nonferrous Smelter Orders, Sec. 110. Prevention of Significant Deterioration, Sec. 111. Fugitive Dust, Sec. 112. Visibility, Sec. 120. Interstate Transport and Acid Precursor Reduction, Sec. 121. Interstate Pollution, and the percentage reduction requirement under the New Source Performance Standards of the 1977 amendments which is not addressed in S. 768.

PREVENTION OF SIGNIFICANT DETERIORATION, Sec. 110.

The Western Regional Council recommends retention of annual average PSD requirements for Class I areas but with elimination of short term increments. We also recommend dropping Class II and III designations. The retention of NSPS or BACT, as applicable, as an integral part of the PSD program will assure that new sources will utilize the best pollution control equipment available.

While S. 768 makes some positive changes in the PSD program, some provisions may be more onerous than the current statute. We support those provisions of S. 768 that retain Class I annual increments, eliminate Class III increments, eliminate tracking of the three hour and 24 hour Class II increments, and makes those increments limits on emissions from a single facility rather than a limit on cumulative emissions from all facilities. We do not support, however, the retention of Class II designations nor short term increments for either Class I or II.

We are also concerned with the provision requiring states to develop within 18 months a classification plan indicating which areas will be Class I, Class II and areas which will not be subject to any increments. S. 768 further requires states to set forth a detailed 20 year plan as to a comprehensive assessment of air quality projections for emission growth, long term air quality goals and permitting requirements for new major sources in areas which states determine should be neither class I or II.

Short term increments in particular add unnecessarily to the complexity of the PSD program, due primarily to the lack of credible models. Because of the inherent uncertainty in modeling results, a PSD permit application is essentially automatically subject to challenge by project opponents. Total atmospheric loading and long-term maintenance of low ambient concentrations are much better indices of air quality protection. These are more accurately predicted and measured by the long term increments than by short term air quality fluctuations measured by short term increments. Studies and case histories reveal that allowable source emissions have almost uniformly been dictated by the BACT or NSPS standards. The increment system has not resulted in significant air quality improvements beyond those resulting from the application of BACT or NSPS.

The Senate Committee's report of last year noted that the very complexity of the PSD program hampered its effectiveness. We would agree with those assessments and our recommended changes in PSD would rectify those concerns. The Committee has instead injected further uncertainties through the new state role and has in fact established procedures which will inhibit flexibility. As noted by the National Commission on Air Quality, the most pronounced effect of the continued use of the increment system, and in particular use of short term increments, would be felt by those industries which are already restricted in terms of siting alternatives. Mining and certain energy developments must locate where resources are found if they are to locate at all; they are limited in their ability to relocate in order to meet increments. The short term increments may be a signifi- cant future constraint upon western resource development while offering very little by way of improvement to regional air quality.

The increment system as proposed in the Senate Committee bill is an "opt-out" system which forces the state to undergo a rigorous and expensive decision-making process for every area not retained in the increment system. Areas would initially receive Class II designation and thereafter the states would have to take affirmative action to change the classification. Given the political delicacy of any decision regarding air quality, this "opt-out" system is a built-in incentive to retain as much of the West as possible within the increment system and to detract from the state's flexibility to regulate areas by alternative means. If the Committee intended to provide the states flexibility in the PSD program, S. 768 completely defeats the purpose with short time constraints and burdensome requirements.

S. 768 also establishes a procedure, as part of the PSD review process, wherein BACT determinations for major sources are to be made in the context of "the most stringent emission limitation for other facilities of the same type and size". We oppose this best of nation technology requirement which removes a state's ability to tailor individual emission limitations to individual circumstances, such as fuel costs and availability, local socio-economic factors, and competing local environmental factors, e.g., availability of suitable waste disposal sites and water availability.

Although application of "the most stringent emission limitation" would be subjective, we believe that in almost all instances outside parties will intervene to impose their view of "best of nation" technology. This provision removes a state's ability to tailor individual emission limitations to individual circumstances. We recommend, instead, that NSPS be reviewed and updated on a regular basis and that independent BACT reviews be eliminated for those categories of sources for which NSPS have been defined.

Sec. 112. VISIBILITY

The visibility issue has its greatest impact in the West which has 120 out of the 188 proposed National Park Service "integral vistas". The WRC opposes the integral vista concept. It is not a part of the Clean Air Act and it would extend Federal jurisdiction far outside the boundaries of Class I areas, frustrating state, local, and private land use and siting decision-making roles. Expanding the visibility program through the device of integral vistas would have staggering potential ramifications for western resource development.

S. 768 adopts the integral vistas concept developed by EPA under the regulatory process. It places in statute the 188 integral vistas associated with 48 national parks which were preliminarily identified for comment in the January 15, 1981, Federal Register. Although individual vistas vary in size, many are far larger than the parks in which they originate and cover huge expanses of state and privately owned lands. One vista reaches out 175 miles to California's coastal range from the Class I area including Mount Whitney. As another example, developmental decisions in nearly one third of the State of Utah would be at the discretion of the National Park Service. By unfortunate coincidence that portion of Utah contains sizeable coal, tar sand, oil shale, and oil and gas resources.

Under S. 768, if the federal land manager alleges that significant impairment of visibility in the integral vista could occur from a proposed facility, even if proposed for private or state lands, the state must prove either that impairment would not occur or that there is an overriding public interest. We believe states would find themselves with an impossible burden of proof in siting a facility.

The Western Regional Council believes the protection of visibility over state and privately owned lands should be a state responsibility and not dictated by a federal land manager of a nearby or remote mandatory Class I area. Furthermore, we advocate amending the Clean Air Act to clarify that the visibility protection program is intended to protect visibility only "within" the Class I areas.

The WRC does support S. 768's clarification that the visibility program is intended to prevent "significant" impairment of visibility in mandatory Class I areas rather than "any" impairment. This provision recognizes that the current state of visibility monitoring and modeling is inadequate to permit definitive predictions of visibility impacts. It eliminates the potential problem of de minimus, inconsequential, infrequent, or virtually non-observable impairment leading to permit challenges and denials.

However, those positive visibility provisions in S. 768 are outweighed by the statutory recognition of the integral vista concept and the state opt-out process included in Sec. 112. We would prefer deletion of all of the section except the "significant" impairment provision.

Sec. 120. INTERSTATE TRANSPORT AND ACID PRECURSOR REDUCTION

We recognize the level of public interest in the acid rain issue and the strong commitment several Members of Congress have made to adopt acid rain control legislation. While the problem deserves careful attention, it would be unfortunate if it were to deprive other important clean air issues of thorough consideration. We would hope that acid rain legislation would move in concert with other amendments to the Clean Air Act. These issues are highly interactive and they ought to be considered together.

Although there remain many fundamental questions about the causes and effects of acid rain, political pressure has increased for the Congress to enact legislation aimed at diminishing acid precipitation through emission reductions and at mitigating its effects.

It is essential that additional scientific data be developed. Although we have an indication of a relationship between emissions and acid precipitation, we do not have reliable information as to which sources contribute most significantly, local sources or remote sources, or as to the entire question of long range transport. Studies have reinforced our understanding of the regional nature of the problem, but leave questions unanswered as to what kind and size of emission reductions and where they should be made to be most effective.

If Congress legislates to impose more stringent sulfur dioxide emission controls to reduce acid precipitation, regional variations and state flexibility must be taken into account.

Initial emission controls should be applied to mobile and stationary sources only in regions where significant acid precipitation problems exist. We continue to advocate accelerated research to better understand the phenomenon. Emission reduction requirements should be implemented in a phased program corresponding to research results.

Overall costs of reductions in emissions to reduce acid precipitation are estimated in the billions of dollars. To the extent that controls are phased corresponding to research results and to the extent that sources are permitted flexibility in achieving reductions, costs can be minimized. Major initial reductions in sulfur dioxide emissions from coal fired power plants can be achieved though coal washing, fuel blending, and use of low sulfur fuels. Technological controls are expensive to install and just as costly to operate. They often merely transform one environmental problem to another. We estimate, for example, that about 3 1/2 tons of sludge must be disposed of for each ton of SO_2 removed by conventional scrubbing.

Sources should be allowed to decide how best they can meet emission reductions at the lowest possible cost. Federal law should not dictate technological means of achieving emission reductions. Maximum flexibility in structuring compliance strategies should be encouraged.

We oppose efforts to spread the costs of emission reductions. Coal fired power plants in the West have already been required to install technological controls at enormous expense. These controls were imposed despite the relatively lower emission levels in the region due to use of low sulfur fuels. These costs were and continue to be borne by western utilities and their customers. For many electricity consumers in the West, about 1/4 of their electricity bill is for air pollution control costs. We see no equity in proposals to spread the costs of emission reductions beyond the individual source. We oppose a regional or national fee or tax on utilities, consumers, fuel, or other proposals that would shift the financial burden from the pollutor.

S. 768 establishes a 31 state acid deposition impact region and requires a reduction in actual emission of SO_2 of 8,000,000 tons from the actual annual emission level of 1980 by January 1, 1995. The governors of the states in the acid deposition region are to enter into negotiations to allocate these required reductions. Any agreement reached by 75% of the governors will be binding upon all the states in the region, and if the governors fail to agree on an allocation scheme, each state's portion of the total required reduction will be equal to 8,000,000 tons multiplied by the ratio of emissions from utility boilers in that state in excess of 1.5 lbs. per million BTU averaged over 1980 to the total of such emissions throughout the region.

The bill also requires a two-year study of interstate transport of air pollutants outside the 31 state region; an increase in funding for the acid precipitation task force; studies and grants for neutralizing acidified water bodies; and studies of the possibility of a fee on electrical generation in the 31 state region for purposes of financial assistance for achieving emission reductions.

We question the necessity and the economic feasibility of an aggressive acid rain program at this time. However, we recognize there is substantial support to proceed based upon incomplete and sometimes conflicting scientific data. It would be improper to use the public support for an acid rain control program to justify the expenditure of billions of dollars to accomplish goals other than environmental protection.

We stress the regional nature of the problem. To date, research in the western states has been more modest than that in the East, but it has not identified any serious acid precipitation problems. Although some isolated surface waters in the West have been identified as potentially sensitive, no confirmed adverse effects attributable to rainfall acidity have been reported. A number of factors contribute to the difference between the eastern and western regional situation: First, there are fewer major emission sources in the West, and they are widely distributed geographically. Second, most existing western coal-fired stationary sources are already subject to the nation's most stringent emission limitations. Of the 17.3 million tons of SO_2 emitted yearly by coal fired power plants in the U.S., only 455,000 tons, about 3 percent, is emitted in the WRC states and only 605,900 tons in the entire 11 state West. Third, most western coal fired plants utilize low sulfur fuels. Fourth, the drier climate of the West results in less acid formation in the atmosphere. Fifth, much of the West has a typically alkaline soil which provides buffering capacity with respect to acidic reactions.

As the Committee deliberates acid rain provisions in the 98th Congress, it will do so amidst an array of new proposals and with the Administration working to make its own recommendations. We have seen proposals calling for a wide-range of reductions in emissions; proposals mandating technological controls; proposals calling for a national fund to defray emission reduction costs either through a kilowatt hour tax on electrical use or a surcharge on emissions.

We do endorse certain concepts embodied in S. 768. S. 768 does not mandate specific technological controls. We agree. Without such controls reductions in SO_2 emissions can be realized more quickly and with the most cost effective methods available. We vigorously oppose attempts to mandate technological controls and their higher costs for purposes other than protecting the environment. Sound Clean Air Act objectives have been subverted in this manner before and it makes no more sense now than it did in 1977. If the Congress is concerned about worker displacement resulting from measures to address acid rain, that problem should be dealt with on its own. Extremely generous retraining, economic development, relocation, unemployment benefits, or early retirement benefits would cost far less for the region, the economy, and the federal budget than would requiring facilities to install mandatory control technology.

If enacted, the flexibility afforded under S. 768 could mean a mix of solutions for sources. Some would likely install scrubbers even if not mandated. However, if there is a drop in high sulfur coal consumption as a result of S. 768, much of the low sulfur coal used in its place would likely come from Appalachia, not from the West.

Furthermore, S. 768 would have the source, the operation responsible for the emissions, pay the costs. Again we agree. A facility which has to pay compliance costs should be allowed to decide how to achieve the reductions in the most cost-effective manner and in a way that makes sense for the plant's location, anticipated life, contractual arrangements, anticipated load demands, and other factors. A fund to pay all or large portions of the retrofit costs will by its very nature drive up the cost of the program. We strongly resist any efforts to include states outside the region as contributors to a fund. We also agree with the bill's provisions for additional studies and for studies in the West.

S. 768 would require reductions of 8 million tons of SO_2 in 12 years. Given the lack of adequate scientific data regarding causes and effects, long term reduction targets should remain flexible to provide policy-makers with an opportunity to review and react to any new scientific data, analyze the results of on-going reductions, and determine the most cost-effective method to achieve the next reduction phase, if indeed, continued research proves that further reductions are required.

NSPS PERCENTAGE REDUCTION REQUIREMENTS

The 1977 amendments to the Clean Air Act imposed a special requirement for fossil fuel fired stationary sources. In addition to meeting an emission limitation, like all other new sources, these facilities must achieve a percentage reduction in emissions without respect to the cleanliness of the fuel burned. In effect, this provision mandates the use of costly scrubber technology, thereby penalizing consumers as well as producers of low sulfur coal and provides a disincentive for replacing older, more polluting facilities.

The provision is counterproductive to the goal of clean air, since low sulfur fuels can often be burned without scrubber technology and still achieve lower sulfur emissions than a source using high sulfur coal and the best scrubber technology available. Large amounts of energy and money are used to build, operate, and maintain scrubber technology when lower emissions can be achieved through the use of cleaner fuels.

The requirement was conceived in the belief that higher sulfur eastern and midwestern coal needed protection from the low sulfur coal in the West. Since 1977 the fallacy of this perception has been exposed. Abundant low sulfur coal exists in the East and Midwest. Due to transportation costs, differences in heating values and state taxation policies, western coal is not always competitive in eastern coal markets.

We realize the difficulty this issue has caused for the Senate Committee, and we were grateful for the efforts of Senators Domenici and Simpson to change the provision last year. We urge the Committee to attempt again to remove the percentage reduction requirement from the Act. Fossil fuel fired stationary sources, like other sources, should be able to use the most economical means available to meet emission limitations including use of low sulfur fuels.

Sec. 111. FUGITIVE DUST

We support the purpose of Sec. 111 to provide an exemption for large, non-respirable, non-toxic particulate, but would hope the Committee this year would clarify in legislative language the phrase "uncontaminated soils." Potential problems involving dust from unsurfaced roads, agricultural activities and mining related activites prompted our work for a fugitive dust exemption. Language currently in the bill might preclude its application to those activities.

S. 768 permits the Governor of a state with an approved PSD state implementation plan to exclude emissions of uncontaminated soil for the purpose of determining PSD increment consumption. Further, the bill would provide that in a state that does not have PSD permitting authority, the EPA administrator may, and upon petition by the Governor shall, discount emissions of uncontaminated soil and certain other emissions for the purpose of determining PSD increment consumption.

Under the present ill-defined PSD provision of the Act, the EPA has struggled for years in an attempt to find a means of distinguishing fugitive dust from other particulate emissions. The need for this distinction results from the fact that most fugitive dust consists of large non-inhalable, non-toxic particles which are localized and do not have adverse effects on public health or welfare. The Western Regional Council believes that particles which pose significant adverse health and welfare impacts should be regulated and particles which do not present similar adverse impacts should not be subject to regulation under the Act in the same manner.

Last year's report on the Committee bill explains that "uncontaminated soil" is intended to mean "earthen material to which harmful material has not been added by industrial activity". We would suggest the following alternative language could remove any question of what may be meant by terminology:

> 163(c)(1)(C) concentrations of particulate matter (i) attributable to the increase in emissions from construction or other temporary emission-related activities, "or (ii) attributal to fugitive dust and other naturally occurring background particulate matter, including, but not limited to, dust from farming and other agricultural activities, unpaved roads, construction activities, and mining and related activities;"

Sec. 121. INTERSTATE POLLUTION

The WRC opposes the interstate pollution amendments now contained in S. 768. The proposed citizen suit amendments would transform the current narrowly and precisely defined system of appeal, with the EPA Administrator acting as a mediator, into one that is extremely open-ended. The provision would permit any citizen, instead of one state pursuing another state, to take action against any alleged source or group of sources on interstate pollution through the Federal District Court. The amendment would enable such action against almost any level or kind of pollution, real or alleged. Existing concepts of specified air quality standards or criteria pollutants would be abandoned.

These amendments would shift to the courts a parallel system of air pollution control taking from the Congress and the EPA their appropriate responsibilities. We are also concerned with the emphasis that the interstate pollution provisions were given in the Committee report of last year. The provisions received little attention in the Committee mark-ups and were considered as a part of an amendment package. Their implications and potential for turmoil among states and classes of sources is substantial. We would urge the Committee to review these provisions, their intent and their ramifications. We would prefer that the Committee deal with alleged air pollution sources head on with the establishment of standards and workable processes rather than open a parallel door of control to the courts and to intervenor groups.

Sec. 107. PRIMARY NONFERROUS SMELTER ORDERS

The WRC supports the Domenici amendment included in the Senate Committee bill to Section 119 of the Act to provide continued flexibility for nonferrous smelters to use supplementary control systems under limited conditions and for the issuance of nonferrous smelter orders to 1993.

On behalf of the Western Regional Council, I thank you for this opportunity to present our comments on S. 768.

Statement presented by
Allen Hardy
Automobile Importers Compliance Association
before the

Committee on Environment and Public Works
United States Senate
November 17, 1983

The Automobile Importers Compliance Association is a trade association consisting of thirty five businesses engaged in the importing, modification, testing and selling of vehicles. The association was originally conceived for the purpose of opposing efforts to legislate these businesses out of existence by amendment to the Clean Air Act. Such an amendment, known as the "Grey Market" Amendment, was passed by this Committee last year during a mark-up session without first being discussed in an open hearing. From the discussion during mark-up, it appears that the vote was based on the conclusion that the Clean Air Act requirements for commercial importers are less stringent then those applicable to original manufacturers. That is not necessarily a valid conclusion.

Commercial importers bring vehicles into the U.S. by one of two methods permitted under the existing Clean Air Act and EPA regulations. First, under Section 203 of the Act, a non-complying vehicle may be imported under bond pending compliance demonstration. After the vehicle is modified and tested using the full Federal Test Procedure and passes the Clean Air Act standards, the bond is released and the vehicle may be sold.

As the second method, a commercial importer may obtain certification under Section 206, the small volume manufacturer provision of the Act. Under small volume certification, the importer must demonstrate compliance with applicable Clean Air Act standards by testing his vehicle, again using the full Federal Test Procedure. However, compliance is determined by passing the Federal standards as discounted by assigned deterioration factors which are determined by EPA. The small volume provision was included in the 1977 Clean Air Act Amendment as a means of permitting certification by small businesses without the excessive costs of durability testing of the normal EPA certification program.

In order to respond to the challenge posed by the "Grey Market" Amendment, I would first like to explain what the amendment does. The amendment changes Sections 203 and 206 of the Act. Section 203 is amended by deleting the provision which permits the importation pending compliance demonstration by any person other than the original manufacturer and permits the importation of vehicles five years or older without any compliance requirement. Section 206 is amended by preventing small volume manufacturer certification by persons who are classified as manufacturers under the Act by virtue of their import activity. We believe the "Grey Market" Amendment will have two certain effects:

- It will reduce competition and thus increase prices and reduce choices for Americans.
- It will put over two hundred small businesses out of business and, in effect, export the jobs.

Equally certain is the conclusion that the amendment will not improve air quality.

Reducing Competition

Commercial importing has existed for a number of years. In the past, most of the vehicles imported by commercial importers were exotic and unusual vehicles desired by a few discerning persons unconcerned about cost. However, the market today is characterized by the desire of many Americans to save money. A non-U.S. version vehicle can be purchased overseas for about one half of the price for a U.S. version of the same vehicle purchased at a dealership. The transportation, safety and emissions modification work accounts for about $5000. The vehicle can be warranted for about 2% of its U.S. value. Thus, a typical vehicle whose cost in U.S. dollars in Europe is $14,000 can be imported, modified and warranted for about $19,500. Essentially the same vehicle will cost about $27,000 at a U.S. dealer even though the transportation cost is lower than for commercial imports and the emissions and safety equipment account for less than $3,000.

If passed, the "Grey Market" Amendment will certainly eliminate this avenue for competition and help to insure that U.S. prices will continue at levels significantly above those in Europe without any corresponding benefit to the U.S. consumer.

Closing Small Businesses

Another certain result of the "Grey Market" Amendment will be to close down over 200 small businesses who engage in the importation testing, or modification of commercial imports. These are businesses whose very business success is dependent upon their ability to comply with U.S. emissions standards. Many of the modifiers use state-of-the art emission control techniques including oxygen sensors, three-way catalysts and closed loop control systems. The testers have invested many thousands of dollars in establishing testing laboratories to perform the Federal emissions test. These laboratories have been approved by EPA.

Implicit in the "Grey Market" Amendment is the premise that some businesses are more desirable than others, that the Clean Air Act is an appropriate vehicle for eliminating the less desirable ones, and that an appropriate mechanism is denial of the right to demonstrate compliance with U.S. emissions standards. This is an unprecedented amendment to an Act that in the past has been concerned with protection of public health. With this amendment the Act would now be concerned with restricting competition.

No Air Quality Benefit

Presumably, the "Grey Market" amendment is related to an improvement in air quality that may result from the elimination of commercial importers. However, this is simply not supported by the facts.

Under the import provision of the Clean Air Act and EPA regulations, each and every vehicle must demonstrate compliance with the Federal emissions standards as measured by the full Federal Test Procedure. This compliance requirement may be more stringent than the compliance requirement applicable to the major U.S. and foreign auto manufacturers. During the development of the EPA assembly line test regulations, manufacturers testified that a test program that requires that each vehicle meet the standards at low mileage is more stringent than the program adopted by EPA for the major manufacturers which effectively only requires compliance of the average vehicle with a Federal standard adjusted for deterioration.

Thus, testing each vehicle under the current EPA import regulations may be more stringent than requirements applicable to the major auto manufacturers. Also, because commercial importers must pay the $800 cost of the full Federal Test Procedure whether they pass or not, a safety margin is built in to avoid a chance failure that may occur with a vehicle close to the standards. This results in even lower emissions.

The durability of the most common emission control systems used by the commercial importers has been proven. The catalyst, air injection systems, EGR systems, and oxygen sensors are off-the-shelf items purchased through traditional parts supply channels maintained by the major manufacturers.

Also, most of the commercial import vehicles are fuel injected, which means that the emissions from these vehicles are much easier to control then carbureted vehicles because fuel management is much more precise.

AICA is aware that some persons in the commercial import business may not be meeting the Federal requirements. (That is not unusual in a regulated industry.) EPA has taken action to investigate reported instances of improper compliance activity, and AICA supports EPA's efforts. If one importer is cutting corners, it taints the entire business, and AICA would like to see appropriate enforcement where necessary. However, even if some members of the industry do not strictly adhere to the EPA requirements, that is no reason to eliminate the entire industry. Rather, we believe that more enforcement and industry self policing is needed to reassure those who suspect the entire industry. AICA plans to submit to EPA at EPA's workshops in November and December of this year, as proposed changes in the import regulations, a comprehensive plan for compliance assurance through self-policing and warranty coverage which will give greater assurance that our members' vehicles meet the regulatory requirements.

We believe that the commercial import business offers a very valuable protection against non-competitive pricing practices and affords the American public a freedom of choice that is not dictated by large corporations. Any problems in the commercial import business are best resolved by constructive and serious regulatory development and enforcement. Such an approach is required in order to be consistent with our concepts of fairness and free enterprise.

We hope that we can work with this Committee, in particular Senator Randolph, to develop an amendment that accomodates any clean air concerns, but preserves the rights of small businesses to compete with large businesses and to demonstrate their ability to comply with Federal environmental standards.

MEMA
MOTOR AND EQUIPMENT MANUFACTURERS ASSOCIATION
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STATEMENT BY: Paul T. Haluza, Director
Government Relations and Public Affairs
The Motor & Equipment Manufacturers Assn.

BEFORE THE: Senate Environment & Public Works Committee
The Clean Air Act (S.768)
November 17, 1983

HEADQUARTERS 222 CEDAR LANE TEANECK, N.J. 07666/PHONE 201-836-9500

Mr. Chairman and Members of the Committee...good morning.

My name is Paul Haluza, and I am Director of Government Relations and Public Affairs for the Motor & Equipment Manufacturers Association...also known as MEMA.

This is our second appearance before this Committee in the last two years in pursuit of changes to certain provisions of the Clean Air Act. However, I would like to briefly overview MEMA for the benefit of the new members of this committee, and to put our organization in perspective relative to the motor vehicle aftermarket.

MEMA represents more than 750 U.S. manufacturers of motor vehicle parts and related equipment and goods. Our members employ over 200,000 people in more than 1,600 facilities located in over 40 states.

More importantly, our members are the principal source of motor vehicle replacement and service parts for more than 400,000 businesses, employing over 2.5 million people in every state.

The motor vehicle aftermarket and service industry is the cornerstone of small business enterprise, including nearly 19,000 minority-owned parts stores and repair garages.

We continue to stress that the amendments we seek are needed to assure the healthy survival of the independent parts and service industries...and a healthy independent parts and service industry is the basic tool needed to maintain mobil source air quality through motor vehicle emission control.

In the brief time alloted me this morning, let me try and sketch out our concerns, with some new ideas for this Committee to consider.

EMISSION WARRANTIES (Section 207(a) and 207 (b))

Since enactment in 1970, MEMA, along with every major segment of the aftermarket, has argued over the merits of the emission warranties contained in the Act. Even with the changes made in 1977, we continue to hold that mandated warranties are unnecessary and redundant to other enforcement authority in the Act.

MEMA fully supports all efforts toward maintaining healthy air quality; however, there is absolutely no quantifiable evidence that emission warranties have...or are contributing to cleaner cars on the streets. In fact, the former chairwoman of the California Air Resources Board, Mary Nichols, is on record stating, "I think warranties have, at least until now, not proven to be the way of getting the manufacturers to provide cars that actually meet emissions over a long period of time in customer service." To this conclusion, she added, "The question is: Where do we go from here?"

We should all listen carefully to this conclusion from someone with impeccable environmental credentials, who headed a state Board that has implemented environmental controls with an intensity that cannot be questioned.

In the real world we cannot at a reasonable price and without economic dislocation legislate technology to assure life-long durability and performance of a sophisticated mechanical product that contains over 15,000 parts, of which, more than 7,000 are moving when the vehicle is in operation.

As a country, we need to be much more concerned about assuring that the vehicle will be properly maintained during its lifetime. It is totally unrealistic to expect the vehicle to perform flawlessly without periodic maintenance.

The pre-sale durability certification requirements on vehicle manufacturers, along with the need to improve fuel economy, have created a whole new generation of high technology under the hood of a car. Maintenance of this technology is more important today, than it was years ago. However, the new technology and length of the mandated warranties have led the motoring public into a false sense of security that the vehicle's service parts need little or no attention.

We are beginning to see evidence of owners paying less attention to periodic maintenance, and, in general, waiting for their cars to literally stop before having routine service repairs made. This is not the way to assuring mobil source air quality. Uniform periodic inspection and maintenance, on the other hand, can help.

What we are trying to say is that Congress must come to grips with placing the responsibility for vehicle maintenance where it belongs...on the vehicle owner. And vehicle owners must be given the incentive to developing proper maintenance habits.

As an example, I would call your attention to the FAA requirement for annual inspection of all private planes, during which the owner must document that prescribed maintenance has been performed. If the plane passes it is issued a certificate allowing it to fly for another year. Further, compliance is the responsibility of the owner, not the manufacturer. These same standards could be easily adapted to motor vehicles.

Given the highly publicized polls of recent years that reflect an overwhelming majority...85% according to the Harris poll...favor strict laws to keep our air clean; I would think that placing vehicle performance responsibility on the owner would be viewed as shared responsibility, if the public is sincere about clean air.

In summary, we are saying there is enough evidence to support elimination of the mandatory emission warranties entirely, and let the manufacturer's new car commercial warranty adjust the production and in-use performance capabilities of the vehicle's emission system, just as they now do for safety items, such as brakes and lights.

However, we do not suggest total elimination. We do suggest retrenchment to a level no greater than 2 years/24,000 miles... a level which will catch any manufacturing defects that have occurred and, thereby, fully protect the car owner.

It is important to note that this proposal would not affect either the 5 year/50,000 mile certification or EPA's recall authority, under Section 207(c), which also extends for 5 years or 50,000 miles.

TAMPERING

MEMA endorses the concept of S. 2023, a bill introduced by Senator Mitchell, a member of this Committee, which would clearly make it illegal to manufacture and/or sell parts designed to defeat a vehicle's emission control system. However, we also feel the tampering provision of the Act need to be changed to clarify the parts covered, and to clearly permit mechanics to temporarily remove a part if necessary for routine maintenance and repairs.

STATE (CALIFORNIA) WAIVERS

We continue to support authority for California, which has unique environmental problems, to establish more stringent motor vehicle emission standards, together with appropriate pre-sale certification procedures for meeting the standards. But here again, we believe that any such authority should preclude that state from adopting warranty requirements longer than any federal requirements.

Our argument here would be the same as we discussed earlier... defective cars should be repaired by the manufacturer...in-use performance should be the responsibility of the owner through proper maintenance.

I would like to thank the Committee for allowing MEMA to discuss our issues with you, and I would hope that we can work together to develop legislative corrections to assure that air quality will not be sacrificed and the cornerstone of small business enterprise will not be prevented from participating in this effort. I will be happy to answer your questions.

Statement of
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On Behalf Of
Automotive Service Councils, Inc.

Before the United States Senate
Committee on Environment and Public Works
Relating to The Clean Air Act

November, 1983

STATEMENT OF DONALD A. RANDALL
RANDALL, BANGERT & PRICE
ON BEHALF OF AUTOMOTIVE SERVICE COUNCILS, INC.
BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
RELATING TO THE CLEAN AIR ACT

Mr. Chairman, I am Don Randall, and this statement is presented on behalf of Automotive Service Councils, Inc., and its national membership of over 5,000 independent repair shop owners. We believe that our statement represents the views of a majority of the 320,000 independent auto repairers throughout the United States.

The structure of this important segment of our economy may be useful to the Congress in evaluating our protestations about the anticompetitive and confusing sections of the Clean Air Act pertaining to the mandatory emission control system warranty and the tampering provisions.

1982

There are 160,000,000 registered motor vehicles including buses and trucks, of which 124,000,000 were passenger cars. U.S. manufacturers produced 6,986,156 vehicles in 1982. The 160,000,000 million motor vehicles traveled approximately 1.8 trillion miles in 1982.

SCOPE OF THE AFTERMARKET

$51.82 billion retail dollars were expended in 1980 with a projected annual growth rate of 3.1% from 1980-1987.

BREAKDOWN OF RETAIL OUTLETS 1980 *

Service Stations	158,500
New Car Dealers	29,800
Tire Stores	14,800
Other Auto Supply	28,600
Other Automotive	94,900
Jobber Retailers	19,520
Total	346,120
Auto Specialty Repair	13,100
Other Auto Repair	128,100
Total	141,200

There are an additional 1,345,000 other retail outlets selling automotive parts and materials (drug stores, department stores, etc.).

OTHER VITAL STATISTICS IMPACTING ON THE AFTERMARKET *

Service Bays	1,210,800
Licensed Drivers 1981	147,968,000
Vehicles In Operation 1981	141,900,000
Industry Related Employment	14,729,299
Do-It-Yourselfers	49,000,000
Parts on Late Model Cars	15,000-20,000
Average Car Age 1980	6.5 years
Average Car Age 1981	6.8 years
Average Car Age 1982	7.0 years

Prior to the mandatory federal emissions control warranties, the new car franchise dealers performed only twenty-five (25%) percent of auto repair and maintenance work. The reason simply was that the aftermarket (NONDEALERS) offered equal or better service at lower prices.

New car purchasers have, for years, gone to the franchise dealers for maintenance, service and repairs only during the term

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* Source: Automotive Parts & Accessories Association

of the voluntary factory warranty. This has varied in duration, but on average traditionally has been between twelve months and two years.

The current statute embodies a most unique federal requirement. The Act mandates both a production and a performance warranty to the ultimate consumer that the emission control system will remain effective for 5 years or 50,000 miles. There is no comparable federal requirement for any other manufactured item.

Simply stated, the Clean Air Act requires the manufacturer to include in the sale price of all new light duty vehicles a service contract guaranteeing to the purchaser the repair or replacement of any emission control parts or components that fail due to manufacturing defect or fail for any reason during either 5 years or 50,000 miles on certain parts specifically included by the manufacturer to control emissions; or 2 years or 24,000 miles on other parts which have a primary purpose other than emission control, but which, nevertheless, have significant effects on the proper functioning of the emission system.

Even simply put, the law is quite unclear. EPA has intrepreted this to be as follows:

> "EMISSION CONTROL PARTS: These are parts which the manufacturer has included in the car to control emissions. If one of these parts fails because of a defect in materials or workmanship, it will probably cause your car's emissions to exceed federal standards. Therefore, these parts, if defective, should be repaired under the emissions warranty.

Exhaust Gas Recirculation (EGR) System
- EGR Valve
- EGR Spacer Plate
- Thermal Vacuum Switch
- EGR Backpressure Transducer

Evaporative Emissions Control System
- Evaporative Canister

Crankcase Emissions Control System
- PCV Valve

Early Fuel Evaporative (EFE)/Heat Riser Systems
- EFE Valve
- Thermal Vacuum Switch
- Heat Riser Valve

Air Injection System
- Air Pump
- Anti-Backfire (Diverter) Valve
- Reed Valve

Catalytic And Exhaust Gas Conversion Systems
- Catalytic Converter
- Thermal Reactor
- Oxygen Sensor

Spark Advance Control System
- Vacuum Advance Unit
- Transmission Controlled Spark Switches
- Electronic Spark Controls

Hoses, gaskets, brackets, clamps, and other accessories used in the above systems."

"EMISSION RELATED PARTS: There are other parts of your car which have a primary purpose other than emissions control, but which nevertheless have significant effects on your car's emissions. If any of these parts fail to function, your car's emissions may exceed federal standards. Therefore, when any of the parts of the following systems are defective in materials or workmanship and have failed in a way that would be likely to cause your car's emissions to exceed federal standards, they should be repaired or replaced under the emissions warranty.

Carburetion System
- Carburetor
- Choke

- Fuel Injection System
    - Fuel Injectors
    - Fuel Distributor

- Air Induction System
    - Thermostatically Controlled Air Cleaner
    - Air Box

- Ignition System
    - Distributor
    - Electronic Controls
    - Spark Plugs
    - Ignition Wires and Coil

Hoses, gaskets, brackets, clamps, and other accessories used in the above systems."

This position by EPA raises several very serious questions for vehicle owners, dealers and independent repair shop owners.

FIRST: What parts are and are not covered?

SECOND: What is the length of coverage on (a) the original parts, (b) parts installed subsequent to original vehicle purchase but prior to termination date of warranty period -- whenever that may be?

THIRD: How does owner determine if the part is defective? Is owner required to pay for diagnosis if parts are defective? If owner goes to independent garage for diagnosis and pays, then goes to dealer because independent garage advised part was warranted, does owner have to pay dealer for second diagnosis? If dealer's disgnosis conflicts with independent garage and dealer refuses to repair or replace part, then owner goes to independent garage to correct the problem which continues to exist, does owner have any recourse; if so, against whom?

FOURTH: Can owner have routine maintenance performed at other than dealer and not void warranty? What is routine maintenance? Can maintenance include replacement of parts other than original equipment parts (OEM)? What documentation must owner retain?

FIFTH: If vehicle is involved in accident and components of emissions system are damaged, may repair shops, other than dealers, fix damage using other than OEM parts? If new OEM parts designed to control the emission system are installed, are they warranted for 5 years or 50,000 from that date? What happens if salvage parts are used?

There are literally hundreds of questions and issues relating to the mandatory warranty (service contract) in the minds of vehicle owners.

The more recent auto manufacturers' warranty books or owner's manuals do not clarify these questions or issues. In fact, in my opinion, these latest publications tend to mislead the vehicle owner-readers into believing that they must return to the dealer for all maintenance, service and repairs during the full 5 years or 50,000 miles.

New vehicle purchasers are paying on average $10,000 for U.S. domestic cars.

We believe that $300 to $500 of that cost is for the mandatory federal emission control warranty (service contract).

This estimate is based upon the prices the auto manufactuers now charge for their voluntary extended service warranty, which in relation to the emission system is less inclusive or narrower in scope than required under the mandatory warranty.

Vehicle owner perception about the vehicle warranty causes motorists to take their vehicles to dealers even when they are uncertain about whether the problem is under warranty.

Additionally, owners are inclined to have nonwarranty work done by the dealer while the vehicle is already in the dealership for warranty work. We refer to this as add-on sales by the dealers.

Ethical independent repair shops point out to their customers warrantable repairs and frequently lose these customers to the dealer -- on the warranty item -- and -- on the nonwarranty items added on by the dealer.

The full impact of the mandatory warranties is only now beginning to be felt in the marketplace. As the mandatory emission control inspections come into full operations, many more vehicle emission systems will fail to pass and owners will take them to franchised dealers.

The mandatory federal emission control warranty (service contract) will cause a significant shift of the competitive aftermarket sales from nondealers to franchised dealers.

It is already having a noticable, although not yet quantifiable, effect. Attached are several exhibits which indicate the types of economic injury that is occurring to both vehicle owners and independent auto repair shops.[1]

Moreover, a substantial number of vehicle owners, who have paid for the mandatory warranty, are electing to pay nondealer shops to repair rather than experience the agony of getting an appointment to return to the dealer for repair that might possibly be under warranty or other higher cost nonwarranty repairs.

These are but a few of the artificial shifts and ambiguities that are created by these mandatory warranties.

The system here described is little more than an unregulated federal monopoly.

It creates an artificial but compulsory service contract relationship between car buyers and car manufacturers. It ties the franchised car dealers into a compulsory service relationship with the car owners on behalf of the car manufacturers.

IT DENIES VEHICLE OWNERS OF THE CHANCE TO GO INTO A FREE COMPETITIVE MARKETPLACE TO PURCHASE NEEDED REPAIRS TO THEIR EMISSION SYSTEMS.

Instead, it permits the auto manufacturers to add to the price of their new vehicles any amount they may elect to charge and the law requires car buyers to pay for this mandatory warranty (service contract).

The Clean Air Act creates a noncompetitive arrangement for repair of emissions systems which is not subject to the

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1/ The attachment referred to has been retained in committee files.

competitive disciplines that prevail throughout the automotive aftermarket. The law now creates a monopoly based system which, like all monopolies, can only result in higher prices, lower quality and a denial to the public of freedom of choice.

THE MANDATORY PROVISIONS SHOULD BE REPEALED AND THE MANUFACTURER SHOULD BE REQUIRED TO OFFER AN EMISSION CONTROL SERVICE CONTRACT AS AN OPTION FOR PURCHASE AT THE ELECTION OF THE VEHICLE BUYER. THIS WOULD RESTORE COMPETITION AND ULTIMATELY REDUCE THE COST TO THE PUBLIC.

Vehicle inspections, where required, can insure that our vehicles remain relatively pollution free. If a vehicle fails inspection, the owner can go into a competitive market for needed repairs, rather than be forced into a monopoly arrangement.

As written in the law, tampering is completely unclear. WE CAN NOT DETERMINE WHAT ACTS CONSTITUTE TAMPERING.

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VEHICLES SOLD IN UNITED STATES
SUBJECT TO
5 YEAR 50,000 MILE WARRANTIES

1980	7,980,800
1981	8,536,758
1982	8,979,194
1983	9,000,000 1/
	34,496,752

NONWARRANTY REPAIRS EXPECTED DURING PERIOD
24th MONTH THROUGH 60th MONTH
(2nd Year Through 5th Year)

	Average Price			
	Dealer		Independent	
7 Oil Changes & Lubes	$ 35	(each)	$ 25	(each)
2 Tune-ups	100		75	
Belts (A/c, Alternator)	50		35	
Hoses (Water)	100		75	
Brake Relining	250		200	
Tires	500		400	

For each of the items above (except brakes and tires), we estimate that only 10% are currently sold by dealers. Only 5% of brakes and tires are sold by dealers due to the very competitive nature of these items.

Once these vehicles start failing emissions inspections -- and some 40% or more of those inspected will fail, there will be a major shift of business from independents to dealers.

The cost to vehicle owners will be more than $1.7 billion annually.

If only 40% of the 35 million new cars now in our population are subjected to emission inspections and only 40% of those fail, the 5,600,000 cars will be artificially directed back into the franchise car dealers for possible warranty repairs.

While vehicle owners are captive in the dealer service facilities, their trained commission sales persons (service writers) will sell those 5.6 million owners other -- nonwarranty items on the above list.

The added cost to motorists will be $1.736 BILLION more than they would have paid for those repairs from independent shops.

The independent shops not only will have lost $4.536 BILLION in sales to those 5.6 million car owners who traditionally have been their customers -- they also will have been deprived, by federal law, of the opportunity to compete for sale of needed repairs to those 5.6 million emission control systems.

The franchised car dealers will be awarded a windfall in sales of $5.796 BILLION.

The public will be the losers because of these anticompetitive warranties.

In California alone, the projected extention to 7 years or 75,000 miles of the emmission warranty will add $45 each in costs for over one million California cars. That extended warranty will direct $199,000,000 to the dealers, and independents will lose $153,000,000 in sales.

1/ Estimated

TABLE A CURRENT MARKET

(work performed on 1,000,000 cars 6-7 years old)

	NEW CAR DEALERS			INDEPENDENT AUTO SERVICE			GRAND
MAINTENANCE	CARS	PRICE	AMOUNT	CARS	PRICE	AMOUNT	TOTAL
Oil Change/Lube	100,000	$ 35	$ 3,500,000	900,000	$ 25	$ 22,500,000	$ 26,000,000
Tune Up	100,000	$100	$10,000,000	900,000	$ 75	$ 67,500,000	$ 77,500,000
Belts	100,000	$ 50	$ 5,000,000	900,000	$ 35	$ 31,500,000	$ 36,500,000
Hoses	100,000	$100	$10,000,000	900,000	$ 75	$ 67,500,000	$ 77,500,000
Brake Relining	50,000	$250	$12,500,000	950,000	$200	$190,000,000	$202,500,000
Tires (4)	50,000	$500	$25,000,000	950,000	$400	$380,000,000	$405,000,000
TOTALS			$66,000,000			$759,000,000	$825,000,000

TABLE B MARKET WITH EXTENDED 7/75 WARRANTY

(work performed on 1,000,000 cars 6-7 years old covered by extended warranty)

	NEW CAR DEALERS			INDEPENDENT AUTO SERVICE			GRAND
MAINTENANCE ITEM	CARS	PRICE	AMOUNT	CARS	PRICE	AMOUNT	TOTAL
Oil/Change Lube	400,000	$ 35	$ 14,000,000	600,000	$ 25	$ 15,000,000	$ 29,000,000
Tune Up	400,000	$100	$ 40,000,000	600,000	$ 75	$ 45,000,000	$ 85,000,000
Belts	400,000	$ 50	$ 20,000,000	600,000	$ 35	$ 21,000,000	$ 41,000,000
Hoses	400,000	$100	$ 40,000,000	600,000	$ 75	$ 45,000,000	$ 85,000,000
Brake Relining	200,000	$250	$ 50,000,000	800,000	$200	$160,000,000	$210,000,000
Tires (4)	200,000	$500	$100,000,000	800,000	$400	$320,000,000	$420,000,000
TOTALS			$264,000,000			$606,000,000	$870,000,000

TABLE C SUMMARY OF MARKET CHANGE

	NEW CAR DEALERS	INDEPENDENT AUTO SERVICE	CONSUMER TOTAL
CURRENT MARKET	$ 66,000,000	$759,000,000	$825,000,000
MARKET AFTER EXTENDED WARRANTY	$ 264,000,000	$606,000,000	$870,000,000
INCREASE (DECREASE)	$199,000,000	($153,000,000)	$ 45,000,000

CMA

CHEMICAL MANUFACTURERS ASSOCIATION

WRITTEN STATEMENT
OF THE
CHEMICAL MANUFACTURERS ASSOCIATION

BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
OF THE
UNITED STATES SENATE

REGARDING S.768
PROPOSED SECTION 112 AMENDMENT
TO THE CLEAN AIR ACT

NOVEMBER 17, 1983

2501 M Street, NW • Washington, DC 20037 • Telephone 202/887-1100 • Telex 89617 (CMA WSH)

CMA is a nonprofit trade association whose member companies account for more than 90 percent of the total production capacity for basic industrial chemicals in the United States. CMA welcomes the opportunity to provide its views regarding the provisions of S.768 dealing with the regulation of hazardous air pollutants under Section 112 of the Clean Air Act.

We can summarize our views regarding S.768, and the regulation of hazardous air pollutants under Section 112, as follows. CMA believes that EPA should and does have the authority to regulate substances as hazardous air pollutants under Section 112 of the Clean Air Act in those cases where such regulation is appropriate. CMA supports EPA regulation where necessary. However, CMA believes that S.768 may actually impede efforts to achieve an efficient, effective and soundly based approach to implementaion of Section 112.

I. Elements of an Appropriate Policy for Regulating Hazardous Air Pollutants

In our view, responsible decision-making under Section 112 requires three things: (1) the best available scientific information; (2) independent scientific peer review of EPA's evaluation of that information; and (3) a clear mandate to engage in the type of risk management that will produce regulatory decisions that make sense.

As EPA Administrator Ruckelshaus stated in recent hearings, "the public deserves the assurance that [the] important decisions" relating to Section 112 regulation "are being made with [a] sound foundation."*/ That foundation must include adequate information concerning the toxic effects of various substances, the extent to which human populations are actually exposed to such substances, the probable health effects, and the availability and impact of applying particular control technologies. Of necessity, much of the information EPA needs must be developed before a substance is listed under Section 112, since standards must be proposed and adopted in a very short period after listing. In addition, the emission and population exposure data for particular stationary source categories must be evaluated before a substance is listed under Section 112, because Section 112 is not a general toxic substances regulatory provision. It is focused solely upon very serious public health risks presented by emissions of pollutants from stationary sources to the ambient air. Consequently, EPA must know whether particular stationary source categories present real public health problems that can be addressed effectively under Section 112 before it lists a substance as a hazardous air pollutant.

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*/ Statement of William D. Ruckelshaus before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce, November 7, 1983, p. 2 (hereafter referred to as "Ruckelshaus Testimony"). (Mr. Ruckelshaus submitted two statements. Page numbers in brackets refer to the shorter version of his testimony.)

Mr. Ruckelshaus has observed that "the process of collecting and evaluating scientific evidence of the health effects of a substance will always require great care and time."[*/] A recent GAO Report regarding regulation under Section 112 confirms this point.[**/] While management improvements may well speed the Section 112 regulatory process at EPA, it is important to recognize that much of the delay is, in Mr. Ruckelshaus' words, "due to the actual complexity of the science or decision relating to a substance rather than due to meaningless intricacies or absurdities of the process."[***/]

In addition to raw scientific data, EPA needs to continue to obtain independent scientific peer review of its

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[*/] Ruckelshaus Testimony at 14.

[**/] Report by the Comptroller General of the United States, Delays in EPA's Regulation of Hazardous Air Pollutants, August 26, 1983 ("GAO Report").

[***/] Ruckelshaus Testimony at 14-15.

interpretations of these data. The GAO Report indicates that review of EPA's health assessment documents by the Science Advisory Board may have contributed marginally to delay in reaching decisions under Section 112. Nevertheless, the GAO Report and Congressman Dingell who commissioned it both indicate that independent peer review is an important part of the process. Congressman Dingell concluded that "such review by this eminently qualified group is essential."*/ The GAO Report itself notes that "SAB review has resulted in significant changes and improvements in various health assessment documents."**/ If such review were frustrated, major regulatory decisions might well be made on the basis of health assessment documents that are "incomplete and uneven in quality . . . poorly written and [that suffer] from insufficient data."***/ Indeed, the GAO Report points up the need to assure that exposure as well as health assessments are reviewed by independent experts.

Mr. Ruckelshaus has stressed the need for care and time in developing Section 112 standards, because EPA's "job is to use the limited resources of government and society to locate and reduce significant risks."****/ That statement aptly illustrates EPA's need for the flexibility to engage in rational and effective risk management. In addition to adequate scientific information, and scientific peer review of efforts to evaluate that information, the Administrator of EPA deserves endorsement of his sensible approach to the regulatory decisions he faces. EPA needs to be able fully and appropriately to take into account the seriousness of any public health risk posed by a particular pollutant, the potential for reducing that risk, the availability and cost of control technologies, and similar factors relevant to the regulatory process.

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*/ Opening Statement of Hon. John D. Dingell (D-MI-16) (Chairman of the House Energy and Commerce Committee and its Subcommittee on Oversight and Investigations), at a hearing on November 7, 1983 at 1.

**/ GAO Report at 28.

***/ GAO Report at 29.

****/ Ruckelshaus Testimony at [5].

Administrator Ruckelshaus recently reminded us that "it is not possible, without banning [a] substance, to establish 'safe' levels for carcinogens, if by 'safe' we mean entirely free of risk."*/ Therefore, he continued, EPA has "made judgments about safety, about the appropriate balancing of risks and costs." Mr. Ruckelshaus concluded with the following observation, which we heartily endorse: "It doesn't make sense to me to regulate without considering such factors as the magnitude of the risks involved, the number of people exposed to those risks, the certainty with which the risks are established, any other adverse environmental consequences of the emissions that cause the risks, and the economic, social, energy and other impacts of controls to reduce the risks further."**/ We agree with Mr. Ruckelshaus and we concur in his judgment that this interpretation of Section 112 is in accord with the real intent of Congress.***/

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*/ Ruckelshaus Testimony at [7].

**/ Ruckelshaus Testimony at [7].

***/ Ruckelshaus Testimony at [7].

II. S. 768 Does Not Provide an Appropriate Framework for Regulating Hazardous Air Pollutants

As discussed above, CMA believes that appropriate regulation of hazardous air pollutants should be provided where a significant public health risk of mortality or serious illness would otherwise exist. And EPA should be assured of a suitable statutory framework to accomplish that objective. Unfortunately, S.768 does not provide such a framework and would detract from the Administrator's access to sound scientific data and adequate scientific peer review, and it would unduly restrict his ability to regulate and manage Section 112 risks in a rational and effective manner.

S. 768's provisions for automatic listing exemplify the problems this bill would pose for the collection and evaluation of scientific data. Automatic listing would introduce rigidity into the setting of regulatory priorities and could result in the regulation of numerous substances as hazardous air pollutants with little if any scientific evaluation whatsoever and without any independent scientific peer review. If air pollution were responsible for a significant incidence of cancer among the general population, this approach to science might be more understandable, though still most unfortunate. But the best available evidence does not indicate a significant incidence of air pollution-related cancer.

To the contrary, a variety of highly respected sources (including the Surgeon General, the National Academy of Sciences, and eminently qualified individual researchers) have concluded that cigarette smoking, not air pollution, accounts for any generalized increase in U.S. cancer rates that may have occurred in recent decades.[*/] As Sir Richard Doll and Dr. Richard Peto observe, if current ambient air pollution levels do cause cancer, "any real effects will probably be undetectably small."[**/] Thus, to quote Dr. John Higginson, former Director of the World Health Organization's International Agency for Research on Cancer: "The available evidence suggests that control of [carcinogens] in the ambient environment . . . will have relatively little effect on cancer rates."[***/]

This is not to say that even the relatively minor or localized public health risks presented by toxic air pollutants should be ignored. But the problem should not be attacked in a hasty and ill-conceived fashion. Instead, EPA should be assured that it has the tools it needs to regulate properly.

[*/] See, e.g., Report of the Surgeon General on Health Promotion and Disease Prevention, 6-13 (1979); The Health Consequences of Smoking: Cancer, A Report of the Surgeon General, p. v. (1982); Committee on Diet, Nutrition and Cancer of the National Academy of Sciences - National Research Council Assembly of Life Sciences, Diet, Nutrition, and Cancer, p. 2-7 (1982); Ames, "Dietary Carcinogens and Anticarcinogens," 221 Science 1256 (September 23, 1983).

[**/] Doll & Peto, "The Causes of Cancer: Quantitative Estimates of Avoidable Risks of Cancer in the United States Today," 66 J. Nat. Cancer Inst. 1191, 1247 (June 1981). In recent testimony, EPA Administrator Ruckelshaus expressed a similar thought, when he noted that the analyses of risk presented by actual or potential hazardous air pollutants often "indicate that the impact on public health of regulating under Section 112 is relatively low." Ruckelshaus Testimony at 2.

[***/] Higginson, "Multiplicity of Factors Involved in Cancer Patterns and Trends," 3 J. Env. Path. & Tox. 113, 123 (March 1980).

As discussed earlier, one of the necessary tools is the development of a solid scientific foundation for making regulatory decisions under Section 112. Automatic listing under S. 768 would be inconsistent with the need for careful scientific analysis and independent peer review. Instead, it turns the regulatory process into a poorly directed and counter-productive "rush to judgment," which will inevitably lead to unjustified public anxiety and cynicism over repeated but baseless cancer scares. Scientific knowledge simply cannot be created by congressional fiat. S. 768 could require listing even though a substance is not really a hazardous air pollutant and even though an emission standard for that substance is not needed to protect the public health. This would distort and misallocate scarce public and private resources and create unjustified public anxiety. In this respect, at least, S. 768 would represent a step in the wrong direction.*/

The second principal component of S. 768 is the change it would make in the standard-setting criteria of Section 112. CMA believes that, even apart from the issue of automatic listing, a flexible and realistic interpretation of Section 112 in its present form would be preferable to a number of the changes that would be effected under S. 768.

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*/ Administrator Ruckelshaus recently undercut what was left of the argument for automatic listing by announcing that he intends to complete listing decisions on approximately 20 to 25 substances from the list of 37 candidate substances by the end of 1985, thereby breaking the logjam that prompted the automatic listing proposal in the first place. At the hearing on November 7, 1983, Congressman Dingell expressed his view that even this undertaking probably was "too ambitious."

Currently, the basic test for setting an emission standard under Section 112 is embodied in the phrase "ample margin of safety." There is widespread agreement that this phrase, if interpreted to require zero risk, would be unworkable in the case of non-threshold pollutants. The recent GAO Report acknowledges that such a literal zero-risk/zero-emission interpretation would have "severe economic consequences" for our society.[*] And Administrator Ruckelshaus recently pointed out that such an interpretation would be unworkable and inconsistent with congressional intent, since it would "cause widespread shutdown of industries emitting non-threshold pollutants."[**] Indeed, again quoting Administrator Ruckelshaus, if the "ample margin of safety" test were applied literally, it could "lead to a certain paralysis in decision-making."[***] CMA believes Section 112 should be interpreted not to require the elimination of all risk without regard to the consequences. Interpreted in this way, "ample margin of safety" provision can be applied sensibly and effectively.

S.768 would require the ultimate in available control technology even though the best evidence indicates that any public health risk presented by the emissions that would be controlled is neglible or so localized that a nationally applicable standard is unnecessary or unjustified. This would be an unfortunate result from the standpoint of public policy. As Administrator Ruckelshaus noted in his recent testimony, when the public health risk produced by emissions of a hazardous air pollutant from a particular stationary source category is small, one must question "whether [Section 112] standards are necessary or appropriate to protect the public health."*/

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[*] GAO Report at 44.

[**] Ruckelshaus Testimony at 17, 19-20.

[***] Ruckelshaus Testimony at 20.

A further problem with S. 768 is that it might be read to preclude the Administrator from distinguishing between sources on the basis of emission rates or volumes in determining whether Section 112 standards are needed and, if so, what level of controls should be imposed. Moreover, S. 768 could be construed to contemplate the adoption of standards based upon technology that has not been adequately demonstrated for the type of source to which it is to be applied. Neither result would be desirable. In particular, EPA's regulations should not dictate the manner in which industry achieves whatever reductions in emissions may prove necessary to protect the public health.

While abandoning the "ample margin of safety" criterion, S. 768 substitutes the concept of an "adequate margin of safety." This makes little sense. As noted above, the one point that has emerged most clearly from the recent debate regarding Section 112 is that, when literally construed,

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*/ Ruckelshaus Testimony at 18.

"margins of safety" cannot sensibly or practically be applied to non-threshold pollutants.

In our view, an appropriate approach to regulating hazardous air pollutants would be to require application of reasonable BACT to those source categories which in the words of the statute, may reasonably be anticipated to result in an increase in serious illness and to require more stringent controls where necessary to eliminate any residual risks of serious illness. But we do object to being required to apply more stringent controls simply because they are available, when they would not produce any significant reduction in risk.

Finally, the Committee-adopted amendment purports to authorize the use of Superfund money for research, study and evaluation to determine whether certain substances or materials should be listed as hazardous air pollutants under Section 112 of the Clean Air Act. Expenditure of Superfund resources for this purpose would constitute an improper use of Trust Fund money.

The resources of the Trust Fund are limited, and must be devoted largely to their basic purpose of funding the inactive waste site cleanup program under Title I of Superfund. This program has recently been designated by EPA as its top priority. The Superfund was created basically to pay for that program, and Congress should not begin "tapping" this fund for other environmental goals.

Section 104(i) of Superfund already provides for a program to do health studies, and a new Agency for Toxic Substances and Disease Registry (ATSDR) has been created. 48 Fed. Reg. 17651, April 25, 1983. This Agency now has a specific set of duties with deadlines pursuant to a Court-ordered settlement. EDF v. Heckler, Civ. No. 82-3514, D.D.C., May 27, 1983. This Agency is actively exploring questions of possible waste site health effects, as it properly should under the Superfund law. This Agency's important efforts, so recently put in place, should not be diverted by demands from unrelated programs.

While CMA believes that health effects research in all environmental areas is important, the limited funds which are needed for waste site cleanup and health effects studies should not be diverted for other purposes. We believe that such air pollution effects studies should be funded out of general agency appropriations, as are other environmental programs and scientific studies.

Conclusion

In summary, while CMA supports a well designed program for regulating hazardous air pollutants, we believe S. 768 is not the answer. CMA would be pleased to work with the Committee to develop alternative legislative approaches.

To provide additional detail on CMA's views regarding the regulation of hazardous air pollutants, I am submitting with this statement copies of the recent GAO Report and of a paper in which CMA discusses the implications of that Report.

TESTIMONY OF THE
LAUNDRY CLEANING COUNCIL ON
THE PROPOSED AMENDMENTS TO THE
CLEAN AIR ACT (S. 768)
BEFORE
THE COMMITTEE ON ENVIRONMENT AND
PUBLIC WORKS OF THE
UNITED STATES SENATE

November 17, 1983

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Executive Director
Textile Rental Services Association
 of America
and
Chairman, Laundry Cleaning Council

William [illegible]. Fisher
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 Institute
and
Member, Laundry Cleaning
 Council Environmental
 Task Force

TESTIMONY OF THE LAUNDRY CLEANING COUNCIL ON THE PROPOSED AMENDMENTS TO THE CLEAN AIR ACT (S. 768)

Mr. Chairman, Members of the Committee,

My name is John J. Contney and I am Chairman of the Laundry Cleaning Council (LCC) on whose behalf I am testifying. With me today is Mr. William E. Fisher, a member of the LCC's Environmental Task Force. LCC welcomes this opportunity to present its views on the proposed amendments to the Clean Air Act (CAA) contained in S. 768.

LCC represents six national trade associations with members in the drycleaning and laundry industry. These associations are: Coin Laundry Association (CLA), International Fabricare Institute (IFI), Institute of Industrial Launderers (IIL), National Association of Institutional Laundry Managers (NAILM), Textile Care Allied Trade Association, Inc. (TCATA), and Textile Rental Services Association of America (TRSA).

The industry is principally made up of small businesses. Of the approximately 72,000 businesses in the industry, roughly 43,000 plants employ some 343,000 people (or about 8 employees per plant), averaging among them annual sales of approximately $140,000. The remaining 29,000 stores which have no paid employees are so small that government statistics show average sales of $17,400 annually.

At the outset let me assure you that LCC and the entire drycleaning industry shares your concern about the health and welfare of the general public, including those directly involved in the drycleaning industry. Indeed, our concerns and those of our members are particularly acute, given the degree to which our members employ perchloroethylene (perc) -- a substance whose use would likely be affected by S. 768 -- in their operations. It is because the preponderance of existing evidence does not give cause for alarm that we believe that perc does not deserve the treatment that would result from enactment of S. 768.

Our primary concern with S. 768 concerns the provisions of the bill which would mandate the automatic listing of a number of substances as hazardous air pollutants if the Environmental Protection Agency does not determine, within specified time periods, that such substances are not hazardous. The criteria in the bill for determining which substances should be considered for possible listing as hazardous air pollutants mandate that perc be identified and studied. As a result, perc would be listed as a hazardous air pollutant if EPA does not decide otherwise in a timely fashion.

As the representative of the nation's major drycleaning and laundry trade associations, we are concerned about this possibility since approximately 85 percent of the drycleaning operations in the U.S. use perc as a cleaning solvent. Since drycleaning systems can only use the specific solvent for which they are designed, operators cannot change their processes by simply switching solvents. Even if they could, the other primary solvent available for drycleaning -- petroleum solvent -- could not be used as a replacement in most areas of the country because of fire code restrictions.*/ Accordingly, the decision on this matter will be of critical importance to the many small businesses which comprise the drycleaning industry.

Quite simply, we believe that perc should be regulated as stringently as is appropriate _if_ sound scientific information indicates that such regulation is warranted. At the same time, we do not believe that such regulation is warranted in the absence of such sound scientific data. Accordingly, we view the automatic listing provision in S. 768 with alarm since it would replace science with arbitrary deadlines as the basis for regulatory action.

As I will discuss later, the precise impact of automatic listing of perc on the drycleaning industry cannot be stated with complete certainty. If S. 768's provisions requiring the imposition of emission levels at the lowest rates achieved by any plant in practice are enacted, the burden on the industry would be extremely significant. If the present statutory requirements were continued, the situation would be clouded by the disagreement concerning the level at which regulatory standards are to be set. There is no doubt, however, that if perc were to be automatically listed, there would almost certainly be a significant adverse impact on the industry and the companies which comprise it.

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*/ Similarly, the only other solvent used in drycleaning -- fluorocarbon 113 -- does not clean as well under normal conditions of use and presents certain environmental questions. It also requires a completely different cleaning system.

I. Impact of S. 768 on the Drycleaning Industry

Section 112 presently requires that a pollutant be listed and regulated if it "may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness." (emphasis added.) This is a rational standard for regulation since a lower threshold would inevitably cause serious dislocation in our economy without measurable improvements in health and safety. Such dislocation would occur because there is a range of pollutants emitted in this country, a number of which may be suspected -- based only on fragmentary or inconclusive evidence -- of having adverse health effects.

S. 768 would effectively eliminate this standard of reasonableness for at least forty pollutants. If EPA failed to act within rigid deadlines, these pollutants would be automatically listed as hazardous and thus subjected to the stringent regulation required by Section 112. While we sympathize with the sense of frustration that results from the pace of EPA's process of listing hazardous air pollutants, we do not believe that an automatic listing provision is an appropriate solution. Sound scientific information -- not EPA inaction -- should be the basis for regulation.

The automatic listing proposed by S. 768 would almost certainly affect the drycleaning industry's use of perc and, consequently, as a result of the factors explained above, the industry itself. The bill would require EPA to determine whether a number of substances, such as perc, would have to be listed as hazardous air pollutants under Section 112 of the Clean Air Act. The initial identification of substances to be considered for such listing would have to include all substances for which EPA anticipates completing health assessments within two years of enactment and all substances for which the Agency has positive data from at least one test indicating carcinogenicity in humans or mammals. Since perc meets both of these criteria, it would almost certainly be one of the substances that would be identified for possible listing, and for which a determination to list must be made within two years.

If no determination is made with respect to a particular identified substance within the two year period, the substance would be listed as a hazardous air pollutant by operation of law. We are extremely concerned that EPA would not be able to make the necessary decisions within two years with the result that perc would be automatically listed. In the first place, the scientific data needed for such a determination may not be available in sufficient time to enable the Agency to act within the specified time frame. Second, as a result of the immense workload that this provision would impose upon EPA, the Agency might not be able to complete the work required to make this determination within the specified time period. Even if all necessary work on the health assessment and other related documents were timely completed, the Agency's internal review process could slow decisionmaking so that the deadline would not be met.

We believe that automatic listing would be unsound both from a scientific and a regulatory perspective. Such substances should be appropriately regulated if there is justification for doing so. However, regulation and the likely resulting widespread economic dislocation should not be imposed merely because EPA does not act by a given date.

The precise impact on the drycleaning industry of the listing of perc is not completely certain. However, Section 112(b)(1)(B)(ii), as proposed by S. 768, would require that:

> "An emission standard established under this clause shall be at least as stringent as the most stringent emission limitation shown by an adequate operating history to have been achieved in practice by a source of the same class or category."

This requirement for lowest achieved emission rates is particularly troublesome in the drycleaning industry since a few plants have been able to achieve emission reductions which are five to six times as great as the industry average and two to three times EPA's estimate of reductions achievable by Best Available Technology. We estimate that the number of plants with these "lowest achieved emission rates" amount to no more than one tenth of one percent of all plants in the industry.

There are a variety of reasons that enable these few plants to achieve such substantial emission reductions. Among these are the type of articles cleaned and the volume of throughput in the particular plant. Perhaps the most important factors are the use of equipment embodying the most recent technology and which has been recently purchased. The new technology equipment is quite expensive, at least from the perspective of the drycleaner who must purchase such equipment. While the cost of such equipment may not seem significant in absolute terms, this cost may be seven to fifteen times the net annual profits for the average retail drycleaner.

The consequence of imposing such a lowest achieved operating rate on the drycleaning industry, if these few plants are used as the standard for what can be "achieved in practice," would be serious and significant. Many drycleaners would be exposed to severe financial strains; many others would not be able to confront such strains.

Even if the present "ample margin of safety" requirement were imposed, the impact could be quite significant. For non-threshold pollutants (pollutants for which it is not possible to identify a level below which exposure would not be expected to result in adverse health effects), EPA has taken the position that the "ample margin of safety" language does not require the total elimination of risks from such substances. By contrast, the General Accounting Office, in its recent report on the hazardous air pollutant program, suggested that EPA may have to set zero-emission standards for hazardous pollutants for which no threshold level can be established.

Although GAO would apparently limit the statutory necessity for zero-emission standards to "pollutants that may pose significant health risks even at low levels of exposure," this limitation is too vague to permit prediction of the risk level at which zero-emission standards would be required. In other words, it is almost impossible to determine from the GAO report what a "significant" health risk would be. If a zero-emission standard was imposed on perc drycleaners, the effect on the industry -- and the small businesses which comprise it -- would be disastrous.

The imposition on an industry-wide basis of the reduced limitations achieved by these very few plants would be unjustifiable, particularly if it resulted from an automatic listing provision. Further, the dispute about the meaning of "ample margin of safety" could create equally significant problems.

Instead of the lowest achieved emission rate requirement or the dispute over the meaning of "ample margin of safety," we suggest that emission standards for hazardous air pollutants be set at levels that would avoid significant health risks, as proposed by GAO, but add that "significant" must be given real meaning. We do not live in a risk-free world, and some levels of risk and uncertainty must be tolerated. Accordingly, we believe that setting these standards at a level achieved by a very few plants which have unique circumstances or at a level that would guarantee the total absence of risk would create unjustifiably harsh results.

II. Scientific Evidence on Perchloroethylene

A provision that includes automatic listing, as just explained, carries the very real threat that a substance will be listed under Section 112 primarily due to the inability of EPA to meet the rigorous timetable in S. 768. Once a substance is identified for consideration, and regardless of the validity of the basis for such identification, the substance is well on its way to an essentially arbitrary listing. Perc provides a perfect example of just such a potentially arbitrary listing: while the slight evidence suggesting the carcinogenicity of perc has been seriously questioned, that slight evidence could nevertheless lead to the listing of perc and concomitant severe effects on the drycleaning industry.

The Committee is probably aware that the basis for the claim that perc may be a hazardous pollutant is the evaluation of a single National Cancer Institute (NCI) bioassay performed with rats and mice. That bioassay prompted the Carcinogen Assessment Group (CAG) of the Environmental Protection Agency to refer to perchlorethylene as a potential human carcinogen in the original 1980 Health Assessment Document (HAD). By the time of the 1982 draft HAD on perchloroethylene, the CAG had considerably modified its conclusions. The CAG at that time considered the evidence from the NCI bioassay to be "limited" and stated that "there is only suggestive evidence that exposure of humans to perc is associated with induction of cancer." See pages A-5 and 1-5 of Attachment A.

The results of the bioassay were further discredited by various independent evaluations of the test. In 1977, the NCI's independent advisory group, the Clearinghouse on Environmental Carcinogens, had these comments in their review of the bioassay:

> "[This test] . . . is so abundantly demonstrated as a poorly designed experiment."
>
> "No information concerning the carcinogenic effect of inhaled tetrachloroethylene [another name for perc] is available from this bioassay."
>
> "No one is arguing with the poor design and the toxic effects that are observed."

See Attachment B. 1/

The overriding fault with the test, as the Clearinghouse Committee concluded, was that the dosages of perc administrated were so excessive that the rats and mice suffered more from toxicity than carcinogenicity. Thus although carcinogenicity was demonstrated, the importance of these results was "significantly blunted by the evidence of toxicity in both the low and high dose groups." See page 8 of Attachment C. 1/ The effects

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1/ Retained in committee files.

observed on the rats and mice were "prima facie evidence for dosage schedules in excess of the maximum tolerated dose." In fact, the Clearinghouse agreed that their determination on perc was merely "flagging" or "alerting" regulatory agencies that there may be a problem for humans and that the agencies should start to gather the additional information that would be necessary to eventually make a decision. See page 115 of Attachment D. [1/]

The faults of the bioassay and of the original 1980 CAG conclusions were also stressed in an independent review of test results by the Subcommittee on Airborne Carcinogens of EPA's Science Advisory Board. The Board concluded that the available data on perchloroethylene did not provide substantive evidence of carcinogenicity.

In September of 1982, the redrafted Health Assessment Document on perchloroethylene was brought to the Science Advisory Board for a second review. By that time, CAG concluded, based on the guidelines of the International Agency for Research on Cancer, that the bioassay data on perc would have to be regarded as "limited." Additionally, the HAD stated that "there is only suggestive evidence that exposure of humans to perc is associated with the induction of cancer."

The Science Advisory Board rejected even these limited conclusions. The transcript of the SAB Committee

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1/ Retained in committee files.

proceeding indicated substantial reservations about the quality of much of the data contained in the HAD, and that, rather than finding "suggestive evidence," it could not find any evidence at all of carcinogenicity. See page 191 of Attachment E. 1/

The validity of the original NCI bioassay was further clouded by the determination of the National Institute of Occupational Safety and Health that a known carcinogen was used as the stabilizer in the perchloroethylene used in the original bioassay. According to the National Toxicology Program, the presence of a carcinogenic impurity in such a test raises strong doubts as to the validity of any conclusions about the carcinogenicity of the compound under investigation.

Since the time of the original NCI bioassay, and presumably because of the serious faults of that bioassay, two additional tests of perc are being conducted. Last year's Science Advisory Board review, after concluding that available data does not support a finding of carcinogenicity for perc, noted that additional information would be available in the future.

The first of the new tests is a second National Toxicology Program/National Cancer Institute test of perchloroethylene which is a gavage test (force feeding)

1/ Retained in committee files.

and which uses the same strain of mice as the original bioassay. The draft results show that non-toxic dose levels specifically predicted beforehand by NCI to be carcinogenic were instead found to show no evidence of carcinogenicity. Only the toxic high-dose levels were carcinogenic.

The second NTP/NCI test is an inhalation exposure test, currently in progress. Inhalation is the most relevant test for gauging human exposure to perc. The results of that test, which EPA would certainly want to examine before making a determination on perc, may not be final until sometime very near the end of the two-year period in which S. 768 would require the agency to make such a determination.

In summary, there is little or no evidence to suggest that perc is a hazardous pollutant other than the questionable results of a bioassay where toxic doses were used and where the test material contained the impurity of a known carcinogen as a stablilizer. Indeed, perc already has been the subject of a Section 111 investigation, after which EPA refused to list perc as a pollutant under that section. In light of these results, LCC believes it would be extremely inequitable to allow perc to be listed by operation of law. There should be no presumption that perc is a hazardous air pollutant until sound scientific data shows that to be true.

III. Conclusions and Recommendations

In conclusion, we believe that regulation of potentially hazardous air pollutants should be based on sound scientific data and should take account of the realities of the world in which we live. We are vitally concerned about the health and environmental consequences of the use of perc, because our members and their employees are exposed to it. At the same time, however, we do not believe that regulatory programs, with their inevitable adverse impacts, should be undertaken unless there is a rational scientific basis for such action. Accordingly, we make the following recommendations with respect to the hazardous air pollutant provisions of S. 768:

-- Scientific research on perc and other substances should be continued. Further, the process of determining whether such substances are hazardous should be accelerated. This process should rely on scientific data and a rational policy concerning the identification of carcinogens.

-- The automatic listing provision should be dropped from S. 768. This recommendation inevitably follows from our position that regulation should be based upon sound scientific data.

- -- If elimination of the automatic listing provision is not possible, we suggest that flexibility be given to EPA in circumstances where it is not possible for the Agency to make a rational decision within the time frame specified. It is quite likely that at the end of the two-year time frame, EPA will still not have adequate data on which to base its decision on perc. For such situations, it seems appropriate to revise S. 768 in a manner which would permit the Agency to postpone decision until adequate data was available.
- -- The standard for regulation of listed pollutants should be clarified so that it is clear that neither the "lowest achieved emission rate" or the elimination of all potential risk is required. Such clarification could be accomplished in several different ways and we would be happy to work with Committee staff to develop a satisfactory approach.

Thank you for this opportunity to present the views of the Laundry Cleaning Council. I would be happy to answer any questions that you may have.

ATTACHMENT A

United States
Environmental Protection
Agency

Office of Health and
Environmental Assessment
Washington DC 20460

EPA-600/8-82-005
January 1982

Rec'd 5/17/82

Research and Development

EPA

Health Assessment Document for Tetrachloroethylene (Perchloroethylene)

DRAFT

Continuous exposure to PERC at levels generally found in ambient air and water is likely to result in accumulation of PERC in the body, particularly since release from adipose tissue is slow. This retention results in a slow elimination of PERC from the body; two weeks or more may be necessary to remove PERC completely from the body upon cessation of exposure.

Tetrachloroethylene is believed to exert its effects upon humans via its metabolism by the liver. There is evidence, from animal studies, that PERC is metabolized by the cytochrome P-450 mixed function oxidases in the liver and is converted to an activated intermediate, tetrachloroethylene epoxide. This epoxide has great propensity to interact with nucleophilic sites thus possibly resulting in alterations of cellular metabolism. Such interaction in the liver is believed responsible for the hepatocarcinogenic potential of PERC. [illegible]

In vitro studies have shown that PERC binds to cytochrome P-450 and may act to uncouple electron transfer. Phenobarbital, a cytochrome P-450 inducer administered *in vivo*, did not alter the *in vitro* binding constant associated with PERC and induced cytochrome P-450.

Both controlled and occupational exposures of humans to PERC indicate that the principal urinary excretion product of PERC metabolism is trichloroacetic acid. Controlled studies with humans have demonstrated that urinary trichloroacetic acid represents 2 percent or less of the amount of PERC absorbed. Most PERC inhaled is excreted via the lungs in unchanged form. Trichloroethanol is a minor urinary excretion product but may be of toxicologic importance since it may have neuro- and cardiotoxic potential.

1.3 EFFECTS UPON HUMANS

1.3.1 Carcinogenicity, Mutagenicity and Teratogenicity and Other Reproductive Effects

Concern that PERC is a potential human carcinogen is based upon the evidence of the National Cancer Institute (NCI) bioassay, in which male nd female mice were administered PERC by gavage. In their 1977 report, NCI ndicated that PERC, at both the high and low dose levels, induced a statistic-lly significant increase in the incidence of hepatocellular carcinomas in oth sexes of B6C3F1 mice. It should be noted that the dose levels used in the NCI study are levels that have been observed, in other experiments, to result in hepatotoxicity. In Osborne-Mendel rats, the resulting high mortality precluded any conclusions with regard to carcinogenic potential. The tetrachloroethylene used in this study was greater than 99 percent pure but was estimated to contain an epichlorohydrin concentration of less than 500 ppm. Based on the dose levels and observed tumor (nasal carcinoma) incidence due to epichlorohydrin in a study conducted by Laskin et al. (1980), it is unlikely that the the response can be attributed to the low levels of epichlorohydrin. The National Toxicology Program (NTP) is testing the possibility that the response was influenced by the impurity in bioassays now in progress, using epichlorohydrin-free PERC.

Some animal studies have not shown PERC to be carcinogenic but they do not negate the conclusions drawn by NCI. Intraperitoneal injection of PERC in strain A mice induced no statistically significant incidence of pulmonary adenomas. In another study in which PERC was applied to mouse skin 3 times per week for the lifetime of the animals, induction of skin tumors was not observed. No conclusions can be made about the carcinogenicity of PERC in Sprague-Dawley rats exposed for 12 months because of the low dose used in this inhalation experiment.

There is only suggestive evidence that exposure of humans to PERC is associated with induction of cancer. There are several epidemiological studies in progress, involving laundry and dry cleaning workers with a history of long exposure to PERC. The preliminary nature of the results preclude any further evaluation at this time.

EXTERNAL REVIEW DRAFT
November 20, 1981

THE CARCINOGEN ASSESSMENT GROUP'S

CARCINOGEN ASSESSMENT

OF

TETRACHLOROETHYLENE (PERCHLOROETHYLENE)

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eproductive Effects Assessment Group

DRAFT
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s document has been reviewed and approved by the Chairman and staff of the inogen Assessment Group, Office of Health and Environmental Assessment, U.S. ronmental Protection Agency. It has not been formally released by the EPA should not at this stage be construed to represent Agency policy. It is g circulated for comment on its technical accuracy and policy implication.

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I. SUMMARY AND CONCLUSIONS

QUALITATIVE ASSESSMENT

Three epidemiological studies on laundry and dry cleaning workers exposed to tetrachloroethylene are in progress, but only tentative conclusions can be drawn from them at this time. In one unpublished contractor report, the observation period was short, the extent of follow-up was incomplete, and important confounding variables were not assessed. A second report suggested a correlation between tetrachloroethylene exposure and lung, skin, and cervical plus uterine cancer, but the findings are still preliminary and are based on a proportionate mortality approach, which has inherent limitations. A verbal communication from the investigator of a third study suggests increased deaths from kidney cancer but the significance of this finding cannot be assessed until the study becomes available.

Tetrachloroethylene induced a statistically significant increase in the incidence of hepatocellular carcinomas at both high and low dose male and female B6C3F1 mice when administered by gavage for a period of 78 weeks. The tetrachloroethylene was over 99% pure but was estimated to contain epichlorohydrin concentrations of less than 500 ppm. It is unlikely that this response could be attributed to the low concentration of epichlorohydrin. Another study in this strain with purified tetrachloroethylene devoid of epichlorohydrin administered by gavage, now in progress at the National Toxicology Program (NTP), should clarify whether the response was due to an impurity.

No carcinogenic effect was observed in lifetime studies of Osborne-Mendel rats given the same product discussed above by gavage or in Sprague-Dawley rats via inhalation exposure for 12 months followed by 12 months observation. However, because of excessive dose-related mortality in the gavage experiment, and because of the low dose level in the inhalation study, no conclusions can be made about the carcinogenicity of tetrachloroethylene in rats. A gavage study in four rat strains, now in progress at NTP, should clarify the nature of the rat response.

Intraperitoneal injection of tetrachloroethylene in strain A mice induced no statistically significant incidence of pulmonary adenomas. In mouse skin initiation experiments, tetrachloroethylene did not initiate skin tumors, nor did it induce skin tumors when applied alone three times per week for the lifetime of the animals. The negative response in these assays does not detract from the positive findings in the National Cancer Institute (NCI) mouse experiment because of inherent limitations in these assays.

Information about the mutagenicity of tetrachloroethylene consists of six reports about bacterical systems, one yeast study, and two in vivo mammalian cytogenetic studies. Only one of the bacterial tests could be verified as positive and that was mutagenic only when the "stabilizer" was present along with tetrachloroethylene. Purified tetrachloroethylene produced no response in bacteria. The yeast test using thymol as a stabilizer was positive. The two mammalian cytogenic studies were negative, but could not be evaluated because of lack of detailed information about the assays. Tetrachloroethylene was found to transform rat embryo cells in culture according to one report.

Animal metabolism studies show that tetrachloroethylene is converted to tetrachloroethylene epoxide, which is a highly reactive compound. Epoxides as a group are regarded as having carcinogenic potential.

In summary, there is evidence that tetrachloroethylene is a potential human carcinogen, based on the definitive hepatocellular carcinoma response in both male and female mice and the metabolic evidence of a direct-acting epoxide metabolite. Applying the criteria for evaluation of experimental animal carcinogenicity studies used by the International Agency for Research on Cancer (IARC 1979), this level of evidence would be regarded as "limited," meaning not sufficient to provide a firm conclusion on its carcinogenic potential in humans. Two studies of laundry and dry cleaning workers have shown preliminary evidence of excess cancer incidence associated with tetrachloroethylene exposure, but no conclusion can be drawn from them until they are complete.

QUANTITATIVE ASSESSMENT

Upper-bounds of risk have been estimated for individuals undergoing either of two hypothetical lifetime exposure situations: 1) continuous exposure to 1 microgram of tetrachloroethylene per cubic meter of air, or 2) continuous exposure to 1 microgram per liter in drinking water. The estimate was based on the hepatocellular carcinoma response in male B6C3F1 mice given tetrachloroethylene by gavage for 78 weeks in the National Cancer Institute (NCI 1977) bioassay. The linearized multistage model is used for low-dose extrapolation in order to give an estimate of an upper-bound of lifetime cancer risk, recognizing that uncertainties in both the qualitative evaluation and the quantitative extrapolation process give risk to a lower-bound of zero risk. The plausibility of the upper-bound is limited when there is no direct evidence for genotoxicity, which is the case for tetrachloroethylene.

Using this procedure, the upper-bound of the individual lifetime cancer risk resulting from continuous exposure to air having tetrachloroethylene concentration of 1 ug/m^3 is 7.6×10^{-6}. The corresponding risk for a drinking water concentration of 1 ug/l is 3.6×10^{-7}. Because of the uncertainties in both the qualitative and quantitative aspects of risk assessment, the actual cancer risks may be lower than those indicated above, which should be regarded as plausible upper-limits and may approach zero.

TEXAS AIR CONTROL BOARD

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November 21, 1983

The Honorable Robert F. Stafford
Chairman
Committee on Environment and Public Works
SD-410 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator Stafford:

We are pleased to note that the Senate Environment and Public Works Committee has resumed consideration of amendments to the Clean Air Act. We have reviewed carefully S.768 and find its provisions to be generally consistent with our recommendations for revisions to the Act. We have enclosed, for the record, copies of testimony concerning needed Clean Air Act amendments which we submitted previously to the Environment and Public Works Committee.

We believe that the provisions of S.768 relating to international pollution, Section 113; relating to vehicle inspection and maintenance, Section 115; relating to construction in nonattainment areas, Section 116; and relating to new source review in areas in which emissions increase from new and modified facilities do not exceed one percent of total annual emissions, Section 117, are especially important and warrant your special attention and continued support. In addition, federal new source review requirements need to be simplified and clarified. As a minimum, the following terms should be clearly, consistently, and unambiguously defined: source, major source, stationary source, major stationary source, modification, major modification, facility, unit and operation. Using these definitions the specific new source review provisions of Sections 110, 111, 112, 116, 165, 169, 169A, 171, 172, and 173 of the Act which are applicable to the activities described by each term should be clearly identified. Also, we recommend that S.768 be revised to prohibit application of the "bubble" concept for purposes relating to review and permitting of new or modified emitting facilities.

Celebrating 150 Years of Texas Independence 1836 - 1986

On September 28, 1983, the members of the Southern Governors' Association adopted a resolution setting forth their policy on acid rain. A copy of that resolution is attached. We believe that the Southern Governors' recommendations included with their general statement of policy should be explicitly recognized and addressed in any acid rain legislation which may be considered. In particular we call your attention to language introduced by Governor Mark White of Texas which sets forth the Southern Governors' opposition to national taxes or costs, which would finance only regional benefits. This language was approved unanimously by the Association. We believe this position would apply equally to proposals to finance a regional acid rain program using revenue from national taxes or fees based on utility rates, air pollution emissions, electric generating capacity, utility boiler fuel consumption or any other similar proposal which would unduly burden Southern Consumers.

We have enclosed four reports which resulted from a project to assess air pollution-related research needs in Texas. We believe these reports document the critical need for effective research to identify and define public risk resulting from exposure to air pollutants. Although we strongly support EPA Administrator Ruckelshaus' efforts to separate the technical and scientific determination of health risk from the application of legislative standards to reduce or manage such risks, we understand that these efforts can succeed only if the research necessary to scientifically define risk is completed. We urge that EPA be provided funds to conduct the needed research and that the Clean Air Act be amended to facilitate the separation of risk determination from risk management as suggested on Pages 4-6 of our June 3, 1981, testimony on Title 1, Part D, of the Act.

Thank you again for providing us the opportunity to submit comments concerning the need for revision to the Clean Air Act. If you desire additional information or if I can otherwise assist you in any way, please let me know.

Sincerely,

Bill Stewart, P.E.
Executive Director

cc: Mr. John L. Blair, Chairman
The Honorable Lloyd Bentsen, United States Senate

Enclosures

APPROVED BY THE SOUTHERN GOVERNORS' ASSOCIATION
Austin, Texas
September 28, 1983

Submitted by Governor David C. Treen
of Louisiana Chairman of Southern
States Energy Board and Lead Governor
for Energy of the Southern Governors'
Association.
(referred by the Southern Legislative
Conference)

2. ACID RAIN

I. Statement of Policy

The Southern Governors' Association (SGA) recognizes that a clean environment is a desire and goal of the nation and the states represented by SGA. The phenomenon of "acid rain" and acid deposition, related to emissions of sulfur dioxide and oxides of nitrogen, is becoming a serious environmental problem in some regions of the country, including particularly the Northeast, and is also the cause of certain international environmental concerns.

Several of the Southern states are major producers of coal and most of the states generate a major portion of electric power with coal. Also, many states are expanding the utilization of coal for power generation. To unreasonably reduce our reliance on coal for the generation of electricity, especially if this caused a shift to petroleum, would not be in the best interest of the nation or the southern region.

The nation's present environmental laws will bring about a long-term reduction in the emissions of sulfur dioxide and oxides of nitrogen. However, despite our nation's present environmental laws, Congress and the Federal government may adopt an acid deposition program that requires significant additional measurable reduction in emissions of sulfur dioxides and oxides of nitrogen. Some of the acid deposition programs currently pending before Congress require large reductions in emissions that would impact both the production of coal and the increased electric utility generation based on coal within the Southern states. The programs would also increase unemployment, limit economic growth potential and create other economic hardships and dislocations in the Southern states that would not be experienced equally in all other regions of the nation.

Most objectionable are those legislative proposals which would impose a cap on emissions of sulfur dioxides and oxides of nitrogen on a state-by-state basis, regardless of whether a state is actually contributing to the problem. These proposals also require an emissions off-set for new sources of sulfur dioxide emissions. Such policy would impose a severe constraint on the ability of the southern economies to continue to grow in the future.

The Southern Governors' Association recognizes the need for progress in reducing acid rain, supports a comprehensive plan that recognizes the national scope of the problem, seeks to control emissions from all sources that contribute to acid precipitation and does not impose heavy fiscal penalties on consumers in the Southern States. We reiterate SGA policy as reflected by our resolution on acid rain adopted at the 48th Annual Meeting of the Conference, held at Hilton Head, South Carolina, July 1982.

II. Recommendation

The Southern Governors' Association hereby encourages Congress and the Federal government to intensify present research efforts in order to develop an effective control program which takes into account, among other factors:

- the need for expanding production of coal in many of the Southern states as a part of their economic base and as a means of increasing conversion of electric power generation to coal-based;
- insuring that ultimate standards not impose greater measurable reductions in emissions in Southern states than are absolutely necessary prior to the time that acid deposition will be reduced under the nation's eviornmental laws applying nationwide;
- the prevention of inequitably burdening the Southern states with increased unemployment, increased electric utility rates and limits on economic growth that would result from an emissions reduction program that does not apply equally to all regions of the nation; and
- the recognition that a cap on emissions, with an accompanying off-set requirement for new sources, would result in severe constraints to the ability of Southern economies to grow in the future.
- the fundamental principle that nationwide taxes or costs should not be imposed where the benefits and use of those proceeds would only accrue to a limited region, especially since such a tax would disproportionately burden utility ratepayers in the South.

STATEMENT

OF

ALLIANCE FOR RESPONSIBLE CFC POLICY

IN SUPPORT OF SECTION 109
OF S.768

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

THE HONORABLE ROBERT T. STAFFORD
CHAIRMAN

NOVEMBER 30, 1983

INTRODUCTION

The Alliance for Responsible CFC Policy is a broad-based coalition of about 500 users and producers of chlorofluorocarbons (also called CFCs). It was formed in the summer of 1980 after the Environmental Protection Agency (EPA) announced that it planned to limit the production of CFCs to current levels, and then eventually to cut production back by as much as 70 percent. Members of the Alliance range in size from large, well-known industrial enterprises with tens of thousands of employees to small, local businesses with few employees and limited resources.

One of the primary purposes of the Alliance is to cooperate with and assist governmental bodies to ensure that their directives and policies pertaining to CFCs are reasonable, scientifically sound, and economically and socially effective. In this connection, the Alliance filed extensive comments on behalf of its members in response to EPA's proposals. In addition, although the Alliance does not itself undertake or sponsor scientific research, it does support the efforts of other industry groups which are engaged in extensive research with respect to all aspects of the ozone depletion theory discussed below. In that regard, all CFC producer members of the Alliance have, since the early 1970s, financially supported the efforts of the Fluorocarbon Program Panel of the Chemical Manufacturers Association.

CHLOROFLUOROCARBONS

Chlorofluorocarbons, or CFCs, are a family of chemical compounds containing carbon, fluorine, chlorine, and sometimes hydrogen. They were invented in 1928 as a replacement for the hazardous and flammable chemicals then used for refrigeration. Since then, their nonflammability, low toxicity, and excellent heat-transfer properties have resulted in their use in a wide variety of other applications. Today they are also used in many applications where efficient use of energy is desired.

Numbers are assigned to the different CFC compounds to distinguish their molecular structures. Although other CFCs have commercial application, four of them -- CFC-11, CFC-12, CFC-22, and CFC-113 -- make up about 95 percent of domestic production and will be the ones we discuss here.

OZONE DEPLETION THEORY

Controversy over CFCs began in 1974 when two scientists at the University of California advanced the "ozone depletion theory." This theory postulates that CFCs released at ground level eventually make their way intact into the stratosphere where they become involved in a complex series of chemical reactions which ultimately result in a reduction of stratospheric ozone.

Since ozone absorbs part of the sun's ultraviolet rays, the more ozone in the stratosphere, the less ultraviolet light which will reach the earth's surface. Less ozone, on the other hand, means more ultraviolet light. If CFCs do in fact reduce the concentration of ozone in the stratosphere, and there are no offsetting effects, then more ultraviolet light will reach the earth's surface. Some evidence suggests that a significant increase in ultraviolet light at the earth's surface will have adverse health and environmental effects.

Publication of this hypothesis prompted research into the subject worldwide. Early assessments by the National Academy of Sciences (NAS), the National Aeronautics and Space Administration (NASA), and other bodies agreed that while there was cause for concern, the science was highly uncertain. Then, in November and December 1979, the National Academy of Sciences issued reports which concluded that if CFC emissions continued at 1977 rates, there was a high probability that in approximately 100 years there would be a 16.5 percent reduction or depletion of stratospheric ozone.

However, on the basis of essentially the same evidence before the National Academy of Sciences panels, the United Kingdom Department of the Environment (October 1979) and the Commission of the European Economic Community (June 1980) concluded that the science was so uncertain that further regulation of CFCs could not be justified at that time. While findings of the National Academy of Sciences command respect, EPA seemed to accept these 1979 reports as conclusive, which they certainly were not, and ignored conflicting assessments. More importantly, scientific assessments have changed considerably since the 1979 NAS reports were issued.

The 1982 NAS report, Causes and Effects of Stratospheric Ozone Reduction: An Update gave a range of 5-9 percent for calculated ozone depletion from CFCs in isolation at steady state (about 100-200 years from now). More recently, the Report of the Sixth Session of the United Nation's Co-ordinating Committee on the Ozone Layer stated a range of 3-5 percent for a similar calculation. Current estimates of steady state ozone depletion from CFCs in isolation are in the range of 2-4 percent. Thus, ozone depletion estimates have been reduced by a factor of about 6 since 1979!

Moreover, these reports recognize that the type of calculation cited above does not reflect reality since it does not consider the effects of trace gases other than CFCs that may also modify ozone. When all these gases are considered and their net effect on ozone is calculated, the models show no ozone depletion for the next 50-100 years, when a "best-guess" scenario is used.

Finally, it is important that actual measurements of ozone have not detected depletion of the ozone layer.

EPA'S REGULATORY PROPOSAL

On April 15, 1980, at an international conference held in Oslo, Norway, the then-Deputy Administrator of EPA, Barbara Blum, announced that EPA intended to put an initial cap on United States CFC production, and over time to reduce U.S. production by up to 70 percent. EPA's press release on the conference said without qualification that CFCs "can destroy the stratospheric ozone layer" and had the headline, "EPA To Tighten U.S. Control on Ozone-Destroying Fluorocarbons."

An Advance Notice of Proposed Rulemaking (ANPR) followed on October 7, 1980. Its first premise was that U.S. CFC production had to be capped immediately. The Alliance responded with extensive comments on January 5, 1981.

THE NEED FOR LEGISLATION

As a result of the comments of the Alliance and others, coupled with greater knowledge of the science, EPA reported to Congress in April 1983 that it saw no need for further regulation at this time but it would support continued investigation of the theory.

In October of 1983, the Agency reversed its position and announced to its counterparts at a United Nations Environment Programme meeting on ozone protection that it supported bans on CFC aerosol propellant uses in those countries that do not now have them and, where such bans were not feasible, that other uses be curtailed in an amount equivalent to an aerosol ban. No new scientific information to support this changed position has come to light. In fact, information developed since the EPA report to Congress suggests less -- not more -- impact on stratospheric ozone from CFCs alone and, when the effects of all trace gases are considered, continues to show an increase in stratospheric ozone. The only explanation for the change in position appears to be the entry of a new team of regulators at EPA who may not be fully familiar with the scientific facts. The Alliance believes that such facts should be used as the basis for regulatory decisions and that legislation such as Section 109 of S.768 is needed.

The Alliance has opposed EPA's proposal for regulation and supports instead the very prudent and constructive alternative policy embodied in Section 109 of S.768 (hereafter Section 109).

Section 109 would postpone regulation of CFCs until

> "...the Administrator [determines] chlorofluorocarbons are contributing to depletion of the stratospheric ozone which is occurring, or is likely to occur, at a rate that may reasonably be anticipated to endanger the public health or welfare..."

We urge the Committee to act favorably on Section 109 even though it remains to be seen what the new EPA Administrator will propose with respect to CFCs. CFCs are so important to our economy, and contribute so much to our present standard of living, that we believe Congress must provide more specific statutory guidelines to EPA concerning any potential regulation of CFCs. For reasons which will be explained below, the public at large, as well as CFC users and producers, deserve assurance that the availability of CFCs will not be curtailed unless there is actual indication of stratospheric ozone depletion at a rate deemed to be harmful to health or environment, or until there is international agreement on the science and on an effective control program. Only Congressional action will give that assurance. The Alliance submits, therefore, that enactment of Section 109 is necessary regardless of the policy preferences of the current EPA Administrator.

SCIENTIFIC UNCERTAINTIES

The scientific issues are not as settled as EPA now indicates. In fact, there remain numerous uncertainties in the ozone depletion theory, including the following:

First, to what extent, if any, do CFCs which reach the stratosphere deplete the ozone layer?

Second, if CFCs do reach the stratosphere in substantial quantities and do enter into reactions which reduce the stratosphere's ozone content, to what extent do other reactions which increase ozone occur? A corrolary question is what will be the net change in atmospheric ozone from all natural and manmade activities (for the amount of ultraviolet light reaching the earth's surface is controlled by the total amount of ozone in the atmosphere, not uniquely by the influence, if any, of CFCs on ozone).

Third, if there is a net decrease in atmospheric ozone, what will be the amount of this decrease and at what rate will it develop?

Fourth, for a net decrease in ozone, how much increased ultraviolet light will reach the earth's surface, and how much harm will it do?

Finally, and central to the entire issue, do the computer models of the atmosphere, which are used to calculate potential future changes in ozone, accurately and thoroughly simulate the present atmosphere, and further, how reliable are they for predicting future changes? A related question is to what extent should one rely on the calculations of necessarily imperfect computer models over actual measurements of the atmosphere?

Extensive government and industry efforts to resolve these uncertainties and answer these questions are underway and will continue. The bulk of industry-sponsored research on the ozone depletion theory is funded by a group called the Fluorocarbon Program Panel (FPP). The FPP was founded in 1972, two years before the ozone depletion theory was announced, in an attempt to gain a better understanding of the environmental fate of the relatively inert CFCs. Since 1974, it has concentrated its work on the ozone depletion theory. The FPP is comprised of the world's major CFC producers, including the five U.S. producers, as well as their European and Japanese counterparts. Since its inception, the FPP has funded approximately $15 million of work by independent researchers of the highest reputation. While industry's effort continues, Section 109 would require EPA, the National Academy of Sciences, and the National Aeronautics and Space Administration to continue their own programs of research in these and other areas of uncertainty.

NO RISK IN WAITING

There would have to be the most compelling reasons to proceed to regulate CFCs in the face of the aforementioned uncertainties. Section 109 would very sensibly require EPA to postpone regulation of CFCs until such time, if ever, as a proper scientific justification were established. The bill would not, however, require EPA to postpone regulation until health or the environment were actually harmed or until it was too late to forestall damage. Actual stratospheric ozone levels can be monitored and analyzed for any developing trend while the research required by Section 109 is continuing. This analytical technique is called ozone trend analysis. Ozone measurements have been made at numerous stations throughout the world for the past several decades. These measurements have been statistically analyzed. To date, no net depletion has been detected; in fact, the evidence shows that the net ozone content of the atmosphere probably increased slightly over the decade of the 1970s. The technique is sensitive enough to detect ozone changes as small as 1.3 percent per decade.

The significance of ozone trend analysis is not so much that it may prove or disprove the ozone depletion theory (at least within the next few years), but rather that it provides a means to detect small changes in net atmospheric ozone, as they occur. The bill before you, Section 109, would defer regulation while basic research on the ozone depletion theory continues under the safety umbrella of ozone trend analysis. Ozone trend analysis would indicate the occurrence of any net change in ozone, and a conclusive finding of a net decrease consistent with theory would trigger reconsideration of the need for regulation of CFCs. This is the very heart of Section 109: there is no risk in waiting while science works to resolve the uncertainties associated with the ozone depletion theory. It is for this reason that the Alliance commends Section 109 to you with confidence that it will serve the overall public interest of the American people.

THE IMPORTANCE OF CFCS

The uses of CFCs and the impact their regulation would have on our society and on the economy needs to be carefully examined. We will start by describing a number of their many applications. There is no way to appreciate fully the implications of EPA's proposal, and the need, therefore, for Section 109, without an understanding of the wide use and importance of CFCs and of the severe limitations of those alternatives which are available.

1. The largest use of CFCs is as refrigerants in refrigeration and air conditioning systems. In 1982, approximately 260 million pounds of CFCs were used in these applications, roughly 33 percent of total domestic CFC production.

Nearly all households in the United States have one or more refrigerators and freezers. Bulk shipments of food and other products are made in about 178,000 refrigerated vans and 27,000 refrigerated freight cars for eventual distribution in the economy, including over 40,000 supermarkets and nearly 180,000 other food stores in this country, as well as 250,000 restaurants and other commercial and institutional eating establishments, all with refrigerated storage facilities.

In addition to cooling homes, offices, factories, hospitals, nursing homes, hotels, and other places of residence or employment, air conditioning is clearly essential today in our society. An entire section of the country, the so-called "Sunbelt," has grown and prospered in recent years in great measure because of the availability of air conditioning. Needless to say, many other regions of the country are also dependent on air conditioning. In addition, many quite important industries could not survive without air conditioning as an integral part of their processing technology. Textiles, printing, pharmaceuticals, computers, and telecommunications equipment, are just a few examples of such industries.

No other refrigerant can be substituted for CFCs in existing refrigerators and air conditioners. In fact, other available refrigerants would be too hazardous for use even if existing refrigerators and air conditioners could use them. Prior to 1931, refrigeration equipment used refrigerants such as methyl chloride, ammonia, and sulfur dioxide. These materials are relatively toxic and some are flammable or explosive. Efforts to develop safe alternatives for CFC refrigerants have to date not been successful.

2. CFCs are used in mobile air conditioning. In 1982, approximately 100 million pounds of CFCs, roughly 15 percent of total domestic CFC production, were used in mobile air conditioning applications, such as automobiles and trucks. Virtually all mobile air conditioning equipment is designed to use CFC-12 exclusively. No other refrigerant can be substituted in this equipment.

3. Rigid insulating foams are another major application of CFCs. In 1982, they accounted for 64 million pounds of CFCs, about ten percent of total domestic CFC production. CFCs are used as expanding agents to produce the foams.

Rigid insulating foams are used primarily for thermal insulation. Typical applications are in commercial and residential construction and in water heaters, refrigerators, and freezers. The continued presence of CFCs in the closed foam cells give these foams their superior insulating characteristics.

With present technology and materials, there is no available substitute for CFC blowing agents in rigid insulating foams. If EPA regulations of CFCs were to make rigid insulating foams less available or unavailable, industry would have to use alternatives such as fiberglass, foams without CFC blowing agents, or wood pulp products. The result would be more expensive and/or less energy efficient products.

4. CFCs are used as an expanding agent for flexible polyurethane foams. In 1982, approximately 31 million pounds of CFCs were used in these applications, roughly five percent of the total domestic CFC production.

Flexible polyurethane foam is used as padding for furniture and for seats in the interiors of transportation equipment.

It has essentially replaced the cotton/steel spring construction formerly used in furniture manufacture. It is also used for bedding, textile laminates, carpet underlay, gasketing, sound deadening, and packaging.

There are two possible substitutes for CFCs in flexible polyurethane foam applications: water and methylene chloride. Neither of these alternatives have the combination of favorable toxicity characteristics of CFCs and desirable economics of products produced with them.

5. CFCs are used as a blowing agent for polystyrene, polyolefin, and phenolic foam. In 1982, approximately 35 million pounds of CFCs were used in these applications, or about 5 percent of the total domestic CFC production. These products are used in everyday items such as protective and cushioning packaging, egg cartons, disposable dinnerware, and industrial containers. These containers are sanitary and nonabsorbent.

Two possible alternatives to CFCs for blowing polystyrene foam are pentane and chemically-reactive blowing agents. However, both have serious drawbacks. Pentane is flammable and highly explosive. Chemical blowing agents can be used, but they are expensive and might make the product uncompetitive. Elimination of CFC foam products would probably force a return to wood pulp products, which are far less sanitary since they absorb moisture and organic matter from food.

6. CFCs are used as cleaning agents or solvents. In 1982, about 120 million pounds of CFCs were used in solvent applications, or about 18 percent of the total domestic production. CFC solvents are most frequently used where high reliability cleaning is essential, as in the manufacture of semi-conductor, aircraft, computer, medical, aerospace and military devices.

The nonflammability and low toxicity of CFC solvents provide a major contribution to worker safety. Hydrocarbon solvents might be used in some applications to replace CFCs, but they are generally flammable and therefore would require additional plant investment in explosion-proof equipment. Chlorinated solvents can sometimes be substituted, but in some cases they can damage plastics and elastomers that CFCs do not harm. Water is also an alternative solvent for some cleaning operations, but critical cleaning of electronic, medical, space program, and defense items is not compatible with water, which leaves residual soil behind.

7. CFCs are used as liquid food freezants. CFC freezants result in a very rapid freezing of the food, which is advantageous for freezing fragile and difficult-to-freeze food products. The primary products frozen by CFCs are cob corn, french sliced green beans, seafood (primarily shrimp and clams), berries, and small portions of meat. In 1982, approximately 9 million pounds of CFC were used in this application, or somewhat more than one percent of the total domestic CFC production.

8. CFCs are used as the inerting gas for certain medical sterilants and for sterilants used in the food spice industry. For example, ethylene oxide (EtO) is an extremely effective sterilizing agent and is preferred by hospitals and medical-device manufacturers for equipment sterilization. However, its flammability in pure form severely limits its use. Consequently, where the sterilizing ability of EtO is required, but where its flammability cannot be tolerated, EtO is mixed with an inerting agent, usually CFC-12. In 1982, approximately 20 million pounds of CFCs were used for this application, or roughly three percent of total domestic CFC production.

REGULATORY IMPACTS

This survey of CFC applications should make it clear that curtailment of their availability would have a permanent and enormous adverse impact on our economy and on the quality of our lives.

- The total value of goods and services that use CFCs exceeds $28 billion a year.
- About 260,000 businesses, most of them very small, use CFCs.
- More than 780,000 jobs are directly dependent upon CFC use.
- About $500 million worth of CFCs are used each year in the United States.

But these statistics do not describe the human impacts. Just about every home in America has a refrigerator. That would not be true were it not for CFCs. Just about every American takes it for granted that refrigerated and frozen foods will be available in local supermarkets. They are there because of CFCs. Millions of Americans work in office buildings and factories which were designed on the assumption that they would be air conditioned, and consequently they would be unusable if CFCs were not available.

Similarly, large areas of our country depend on CFCs for the air conditioning which makes the hot and humid season liveable at home and in transportation to and from work. The health, comfort and increased productivity that results from air conditioning would appear to be self evident and irreplaceable.

Finally, any limitations on the availability of CFCs would have significant energy-related effects. These would include efficiency losses associated with using substitutes in mobile air conditioning, in residential and commercial air conditioning and refrigeration, in insulation, and for food freezing. A study conducted by Battelle Columbus Laboratory for an Alliance member company estimated that a complete ban of CFCs might result within ten years in an annual increase in U.S. energy consumption equivalent to 226 million barrels of oil. That corresponds to 12 percent of total U.S. crude oil imports in 1980, or about 43 percent of the annual oil production from Alaska's north slope. There would have to be the most compelling reasons for a regulatory program which could involve those kinds of energy penalties.

FUTILITY OF UNILATERAL REGULATION

If there were depletion of stratospheric ozone due to CFCs, and if that depletion were to create an unreasonable risk to human health, the problem would be truly an international one. CFCs are produced and used worldwide. It ultimately would make no difference where they were used and released into the environment; *any* potential depletion of the ozone layer would impact *all* countries. Solutions to the problem, if a problem exists, must therefore be international. No single country could specifically protect "its" ozone layer even if all use of CFC within its borders were stopped. Further, no single country could reverse any worldwide problem of ozone depletion through its unilateral regulation. This includes the United States, which only accounts for about one-third of total world CFC production. As EPA noted in its ANPR, "No single nation accounts for a large enough portion of world use or production to be able unilaterally to control ozone depletion."

Most countries other than the U.S. remain unconvinced of the need for further regulation at this time. The European

Economic Community (EEC), for example, which accounts for about one-third of total world production, concluded in a June 1980 report that "a regulatory delay of up to five years can be reasonably accepted." Further, in comments on EPA's October 1980 ANPR, the EEC stated that "with regard to the validity of the ozone depletion theory, [it] cannot endorse all of the findings suggested by EPA," and that "EPA has not considered the numerous other studies on this problem which have been conducted outside the United States." In June 1983, the EEC Council concluded that "The current scientific and economic information indicates that no change in the policy of precautionary measures that the Community has pursued so far is needed" and the matter would be reexamined by the end of 1985.

For these reasons, the Alliance strongly supports the position that regulation of CFCs be conditioned either upon the demonstration of a clear hazard or upon development of an international scientific assessment and, if needed, the establishment of an effective international control program. Obviously, if analysis of actual measurements such as ozone trend analysis tells us a problem is developing, we should act. Absent such evidence, however, it would be quixotic to impose the burdens of further regulations on CFCs.

The Alliance appreciates the opportunity to present testimony in support of Section 109. We should also note that the Alliance's comments on the ANPR (along with those of many others affected by EPA's proposed production restrictions) are available if the Committee desires additional information on the subjects we have touched on.

5100 FORBES BLVD., LANHAM, MD 20706, 301/459-9110, TELEX: 4990739-APAAI (VIA ITT)

AUTOMOTIVE PARTS & ACCESSORIES ASSOCIATION

November 15, 1983

The Honorable Robert Stafford
Chairman, Environment and Public Works
Committee
United States Senate
Washington, D.C. 20510

Dear Senator Stafford:

We are pleased to have the opportunity to submit testimony on amendments to the Clean Air Act. We ask that our statement be incorporated into the hearing record on this legislation.

The Automotive Parts and Accessories Association (APAA) represents over 1500 members engaged in the manufacture, distribution and retail sales of automotive products. Our members are deeply concerned about several provisions of the Clean Air Act, and in particular, the severe anticompetitive effects of the Section 207 warranty provisions on the automotive aftermarket. These provisions have caused and will continue to cause, significant economic hardship in our industry.

I regret not testifying in person, however, APAA's committee meetings in Chicago which are scheduled long in advance, precluded me being at these very important hearings.

We hope you will find our views helpful in developing legislation and we trust you will give our suggestions due consideration.

APAA would be pleased to respond to any inquiries the Committee may have pertaining to our position.

Sincerely,

Julian C. Morris
President

Enclosure

JCM:dep

STATEMENT

of the

AUTOMOTIVE PARTS & ACCESSORIES ASSOCIATION

5100 Forbes Boulevard
Lanham, Maryland 20706

before the

UNITED STATES SENATE

ENVIRONMENT AND PUBLIC WORKS COMMITTEE

regarding

CLEAN AIR ACT AMENDMENTS

November 15, 1983

Submitted for the record

It is unfortunate when federal legislation, borne of the desire to protect citizens and environment from danger, is turned on thousands of small businesses and in doing so, threatens to disrupt if not destroy a healthy and thriving market. It is even more unfortunate when the makers and translators of public law drive a stake into the heart of competition and in doing so, impose on consumers both higher costs and great inconvenience.

Automotive Parts and Accessories Association is a national trade association comprised of over 1500 manufacturers, independent manufacturers' representatives, distributors and retailers of automobile parts and accessories sold primarily, but not exclusively, in the "aftermarket." The aftermarket consists of products manufactured for and services provided to automobiles by manufacturers, distributors and retailers that are independent of the original auto manufacturers (the "OEM market").

The aftermarket is vital to this nation's economy, providing at least double the employment of the vehicle manufacturers and their dealers. In matters affecting the automotive industry, however, we often are overlooked due primarily to our size, numbers and geographical distribution -- we are hundreds of thousands of medium and large but mainly small manufacturers, retailers, distributors, and sales agents located in every state of the union producing and selling in excess of $54 billion of parts, accessories and chemicals annually.

Congress and the nation have appropriately established that clean and healthy air is a desirable national goal. As is often the case with public policy implementation, however, the particular method or methods employed to attain the goal can have undesirable and unforseen effects. Such is the case with vehicle emissions reduction scheme, which threatens to have grievous and harmful consequences to many small businesses and

and the people they employ.

APAA's concerns about certain provisions of the Clean Air Act involve the very survival of the automotive aftermarket, an industry with competition as its cornerstone. While our concerns span several elements of the vehicle air clean up program, we will concentrate here on the warranty issues and await another opportunity to confront the additionally damaging features of the tampering and state waiver provisions. In particular, the emission warranty provisions in Title II of the Act threaten to distort and perhaps destroy healthy competition between vehicle dealers and the independent aftermarket.

APAA believes:

1. It is time to roll back the Act's existing warranties in Sections 207 (a) and (b) to two years/24,000 miles, a step that will allow the forces of free competition--not government regulations--to determine whether the public would prefer to patronize aftermarket facilities or new car dealers upon the expiration of a voluntarily given new car warranty.
2. It is time to utilize the recall provisions of the Act effectively, so that entire classes of consumers are protected from serious failures of a model without triggering the avalanche of individual disputes that could occur under the Act as presently interpreted.

The warranty provisions of the Act assumed their current form with the advent of amendments in 1977. The amendments were designed to represent a legislative accommodation of the diverse interests of several sectors of the marketplace--auto manufacturers, and dealers, parts makers, independent repair shops, and consumers--as well as those federal and state regulatory bodies charged with environmental controls. These accommodations were achieved after lengthy and arduous hearings and exhaustive consideration by committees of both the House and the Senate.

Of particular concern to these bodies were the potential anti-competitive effects of the law. Such implications have been acknowledged repeatedly since the early 70's by industry witnesses, various Administration representatives as well as by Congress itself. Among these fears were the potential for monopolization of repair work by auto dealers using only original equipment parts, the usurption of additional service work by the auto dealers which otherwise would normally be performed by independent shops or vehicle owners themselves using independent aftermarket parts, and the reluctance on the part of consumers to use other than original equipment parts when operating and maintaining their vehicle for fear of jeopardizing their warranty rights.

In order to mitigate these potentially damaging effects, at various times in the Act's history, elements of both industry and government have called for the reduction of the emission's warranties to anywhere from two years to as low as 12 months.

In response to the anti-competitive issues raised before both houses of Congress, the 1977 amendments as finally enacted retained several provisions designed to address the anti-competitive concerns. Among these provisions are (1) a prohibition against manufacturers communicating to vehicle purchasers that warranty coverage is conditioned on the use of manufacturers' parts or services, (2) a requirement that maintenance instructions include a bold face statement that maintenance can be performed at any service facility without invalidating the warranty, (3) the development of a program that would permit aftermarket parts manufacturers to certify that their products are equivalent in emissions performance to original equipment parts, and (4) clarifications that (a) only parts that cause a vehicle to fail an in-use emissions test are covered by the first two year/24,000 mile prong of the warranty, (b) the latter three year stage of the warranty pertains only to primary emission control parts, and (c) vehicle owners are responsible for the costs of maintaining their vehicles at all times.

The inclusion of these provisions in the Clean Air Act Amendments of 1977, and their legislative history, indicate a very strong congressional intent to insure that consumers and the aftermarket industry would suffer no undue anti-competitive consequences from the federal warranty. The opinions of the EPA on these matters were considered and reflected in the final draft of the bill. In view of the extremely broad market effects of Section 207, and the considerable effort made by its drafters and sponsors to balance the interests and burdens of the market groups that would be affected by the warranty, it is clear that Congress did not intend EPA to override these careful choices in exercising its authority.

Armed with imagination if not authority, EPA has acted in a manner which APAA believes distorts the competitive balance that Congress sought to achieve in 1977. Specifically, by applying the warranty to an extensive list of parts over the entire five year period, EPA has helped insure that new car buyers will return to their dealers for service for a number of years beyond what the marketplace suggests would happen if consumers had a free choice. Similarly, it has allowed California to mandate a list of more than 100 parts covered under a defects warranty, again without concern or care for the competitive balance Congress has striven to achieve.

We believe that the time has come for Congress to examine not just the scope of these warranties as interpreted by the EPA, but also their purpose, design and intent.

Does the warranty induce manufacturers to build in durability? No! Some would argue that the vehicle manufacturers need to be prodded to build durably clean cars. While this may be arguably accurate, we can find nothing in the federal warranty that forces manufacturers to build cars to satisfy air quality demands.

On the contrary, vehicle durability is created at the design and production stages under rules that require prototype 50,000 mile certification and assembly line testing. These two requirements combined with the virtually unlimited threat of post-production recall sufficiently sustain the durability inducement.

Since the early 1970's, EPA testing programs consistently have shown that in-use vehicles exceed standards. While we have reason to believe that in-use emissions degradation of vehicles is declining, it is nonetheless apparent that the principle cause of in-use non-compliance owes to the failure of vehicle owners to keep their vehicles properly maintained. Under the law, vehicle manufacturers are not responsible for cars that fail to meet emissions standards because their owners have not taken care of them. That the warranty is vacant under these circumstances further mitigates any added durability inducement a warranty might create.

There are at least three additional factors that subvert the theory that the warranty induces durability.

First, it is the manufacturer through his dealers that generally controls the determination of what is and is not a defect or failure for which he is responsible. And as EPA well knows, this determination often is a judgment call. Since a denied warranty claim means a windfall profit not only of the warranty cost built into the sticker price but also of all subsequent repair costs, it challenges the imagination to believe a judgment bias does not favor the manufacturer.

Further defusing the durability inducement theory of warranty is the infrequent nature of in-use tests. In some geographical areas, those tests are employed per vehicle only once a year; in other states, even less frequently; and in yet others, no tests are administered at all. Moreover, the tests employed are calculated to spot only the gross emitters thus even further diminishing the exposure of vehicle manufacturers to warranty claims.

Add to this the obvious consumer confusion over what the warranty entitled them to and one can correctly conclude that the warranty factor in the emissions control strategy provides little inducement to durability given the vehicle manufacturers' limited warranty exposure.

Does the warranty reduce emissions? No!

While there has been little public debate between industry and the EPA on whether the warranty reduces emissions, an opportunity to glean the mental meanderings of an emissions control agency has been amply provided in the State of California by its Air Resources Board, which has imposed an even more expansive emissions warranty on new vehicles. At May 1979 hearings in San Francisco on the warranty matter, the ARB staff acknowledged that warranty regulations do not relate to the control of emissions. Earlier that year, the head of the ARB, Mr. Thomas Quinn, publicly avowed that emission control warranty regulations were intended more as a "consumer benefit" than as a means of effectively reducing air pollution.

Indeed, we challenge the Congress, the EPA, and the ARB to provide us with quantitative information that demonstrates any increase in vehicle emissions under the present control strategy absent the warranty. We know of no such evidence.

Does the warranty offer consumer benefits? No!

While the warranty neither induces durability nor reduces emissions, there are those who contend that it offers a consumer benefit. This curious conclusion presumes some mysterious advantage consumers gain by being saddled with monopoly pricing and a source of service that repeatedly has been shown as unsatisfactory to them. Emission control regulations strongly encourage many customers to return to new car dealers for a broad range of services long after the expiration of the manufacturer's commercial warranty and long after the time that the marketplace suggests would occur if consumers had a free choice between using new car dealers and aftermarket parts and services. They do so with the false hope that there is some sort of warranty panacea that runs for 5 years, or because of concern that service or repairs performed by independents on non-warranty work may affect future coverage under the warranty.

That the warranty masquerades as a service contract with the costs of illusory benefits included in the initial vehicle price is undeniable. So too are the ties a warranty creates between the consumer and the offerer's parts and service throughout the warranty period. This psychological bond occurs when consumers accept restricted service, regardless of price, to avoid jeopardizing assurances that the warranty which they paid for when they purchased their vehicles will be there for them should they need it.

Manufacturers of high priced consumer products that require maintenance throughout the course of their useful lives often employ warranties as a strategy not only for selling the product but also for binding the buyer to the seller long after the initial sale is made. Although this bond may be only psychological in nature, it can be deadly to the competition.

That a warranty carries market advantages for the warrantor is clear from recent events in California. Passage of legislation there last year permits vehicle manufacturers to reduce their emissions warranty on carburetion and ignition parts from five years to two years. If the warranty truly imposed added costs and obligations on the vehicle manufacturers, one might presume a three year reduction would be welcome and embraced. However, that has not been the case. The vehicle manufacturers have chosen to keep the more lengthy warranty in place. One might surmise from this action that the manufacturers have deemed the longer warranty to be in their best interest. We would quite concur.

When U.S. regulations unnecessarily diminish competition, Americans lose. They lose not just the benefits of efficiency and lower costs, but the true freedom to choose how and where their products are serviced.

There is a well documented history of new car dealers' reluctance to perform warranty work because of its lack of profitability. Perhaps for this reason and maybe for many more, a 1981 report prepared by Booz-Allen & Hamilton, Inc. found that consumers were significantly less satisfied with dealer repair work than with work done by any other type of repair facility. The same study showed that, in a free market place, dealers suffer from the lowest rate of repeat business. A warranty is a device to counteract this pattern.

Time and again, the aftermarket has pleaded its case for a warranty reduction before Congress. If the warranty is solely a device to shift the repair burden from consumers to vehicle manufacturers and impose on them obligations not otherwise extant, why then do we not also see the vehicle manufacturers and their dealers pleading for a similar course of action? We contend it is because the warranty provides them with a huge sales and marketing opportunity, an opportunity unfairly created at the expense of those in the independent aftermarket.

Just as the warranty draw motorists to dealerships for service, so too does the warranty increase the purchases of automakers' proprietary parts. Nowhere is this more certain or significant than with import car dealers, who now represent a major and significant force in the marketplace. These dealers use in repairs performed, primarily those parts made abroad, an act that not only reduced domestic competition but also contributes to the imbalance of trade this country presently suffers from.

No matter how few or how many parts are covered by these 5/50 warranties, we feel certain that the motorist will want to believe he has warranty protection unless he is furnished, prior to choosing his source of service, a precise determination of what is wrong with his vehicle. Some car owners experience performance problems that they assume are warranted emission control problems. Others first are alerted to a possible malfunction when their vehicles fail one of the growing number of vehicle emissions inspection tests. Vehicle inspection test reports given to motorists whose cars have failed do not provide, nor based on current analyzer technology can they provide, an exact repair prescription that allows the car owner to determine whether the needed repair is warranted or not.

The warranty undercuts competition:

The potential impact of Section 207 warranties on competition stems from the way the marketplace works in the absence of regulation. In short, there is ample evidence to show that customers who visit new car dealers for warranty work also have non-warranty work performed at the same time. There also is evidence that as many as 92% of inspection failures occur as a result of the lack of proper maintenance, or other factors not covered by warranty. Warranty terms are quite specific. If a vehicle has not been maintained according to instructions, there can be no legitimate warranty claim.

The problem for the aftermarket follows from these facts. It is not simply that new car dealers get to do warranty work. The artificial distortion of competition--the true anticompetitive and anticonsumer impact--stems from the fact that extended emissions warranties result in customers going to new car dealers for work that they learn, too late, is not covered by the warranty. In those cases, the aftermarket loses the opportunity to do both the work not covered by the warranty and the other repair or service work that is done while the customer is at the dealer.

Most of the routine service that new car dealers perform on cars takes place while a commercial warranty is in force. As historical buying patterns demonstrate, dealer repairs and service decline significantly once a commercial warranty expires, and competitive prices and other market factors lead the majority of motorists to the independent aftermarket. In other words, when warranty dictated trips to dealers taper off, dealer performed maintenance and repairs fall drastically.

The current retail aftermarket is highly competitive. While dealer service is part of this sector, it is not dominate. Of the 75 billion spent annually on parts and service, 51.6 billion is spent in independent garages, auto repair and body shops, service stations, mass-merchandisers, grocery stores, and chain stores. That two out of every three motorist's dollars are channeled to the independent is indication that in an unfettered marketplace the consumer knows where he can get the best service at the most reasonable cost.

During the new car warranty, car owners tend to patronize new car dealers and dealers tend to use auto parts distributed by their manufacturers. However, after the expiration of the warranty, 75% of all auto service is performed by the independent using non-OEM parts. Maintenance of the vehicle, therefore, in the third, fourth and fifth years, becomes the mainstay of our business.

The potential impact of applying warranties to virtually every part of a car is apparent. According to surveys published by the Automobile Information Council, statistically significant trends for tune-ups were developed that reflect the competitive balance between car dealers and independent servicing dealers changes as a function of the age of an automobile. For example, car dealers performed 57% of the tune-ups during a car's first two years, but this figure dropped precipitously to 24% during the third through fifth years and to 14% thereafter. By comparison, independent servicing dealers performed 22% of auto tune-ups within the first two years, but doubled their service to 44% in the third through fifth years. Correcting percentages for do-it-yourselfers showed that the car dealers' percentage of the tune-up market fell from 71% to 36% for the periods compared, while independent servicers increased their share correspondingly from 29% in the first two years to 64% in the third through fifth years.

These statistics tend to demonstrate that dealers perform much of the routine maintenance and servicing during the first and second years while a one or two-year warranty is in force. Dealer repairs decline significantly once a warranty expires, and competitive prices and freedom of choice lead the majority of motorists to the independent aftermarket.

Many of the auto components which are related to emissions control constitutes a significant share of the aftermarket parts sales. Not only are these components the foundation of our manufacturing business but they also count for a large share of the businesses of neighborhood auto shops and independent service centers.

When most state and local emissions inspection programs are fully implemented next year, the impact of the warranty on our market and market share will be brought to bear. The concomitant loss of business, we fear, will drive out many small independent firms operating on small margins, which inturn inevitably will lead to reduced competition and higher repair prices.

The period in which the car manufacturers experimented with extended auto warranties demonstrates that longterm warranties alter owner maintenance habits. From 1967 through 1970, all domestic manufacturers provided a five year/50,000 mile power train warranty. This warranty did not cover typical maintenance items such as spark plugs. Yet in National Family Opinion survey the extended power train warranty was shown to have prompted many owners to obtain spark plug replacements from car dealers rather than doing the work themselves or patronizing an independent facility as they otherwise would have done. In 1964 among two and three year old cars beyond the prevailing one year new car commercial warranty, dealers performed approximately 22% of spark plug replacements. However, by 1970 when all domestic cars between two and three years old were under the extended 5/50 warranty, the dealer's share had risen dramatically to 38%. When the extended warranties were removed by 1974, dealers share of the plug replacement business among 2-3 year old vehicles had slid back to only 22%. As this survey shows, extended warranties shift a substantial volume of non-warranty business to the warrantor.

As testimony by the Automotive Service Councils points out, the warranty puts the independent service facility operator in an unwinnable position. While the existence of an emissions test failure raises the possibility of a defect, the likelihood is that no defect exists. Only a diagnosis can determine that and if the independent performs the diagnosis, and discovers a defect, he is bound by conscious and the law against fraudulent practices to inform the owner he maybe entitled to free warranty work at the dealer. Losing a customer to the competition over legitimate warranty repair is one thing, but there is no certainty the dealer diagnosis will yield the same results. What is certain is that the customer is out the cost of at least one diagnosis. And what is probable is that the dealer will at least benefit from non-warranty repairs.

While we believe it unnecessary, we can live with a two year warranty. Much of the car repairs in the first two years belong to the dealer, and what belongs to us we are willing to forego in order to secure what has always been ours..access to the next three years.

The Alternative: Recall

We suggest that a strongly administered two year warranty combined with a vigorous recall program is a sufficient net with which to snare heavy polluters and force their repair by the vehicle manufacturers. We believe that Congress should consider striking a better balance between environmental benefits and competition by designing a warranty that extends for only two years during which most defects will be uncovered and most marketplace distortions minimized.

The viability of a strong recall program is demonstrated by the one employed by the National Highway Traffic Safety Administration to ensure vehicle compliance with Federal Safety Standards. The Safety agency exerts powerful compliance leverage without any need to resort to warranty measures.

There are a multitude of advantages to a recall scheme.

Reducing the warranty does not take the vehicle manufacturer off the hook requiring durable emissions control systems. On the contrary, the huge liability potential of a large recall should provide a substantial economic incentive to produce reliable and durable systems. A determination that a significant number of models or engines are failing to meet applicable emission levels demand a repair strategy based on recall. That the recall net is wide enough to catch not only system failures resulting from design defects, but also production errors and unanticipated system deterioration, further accentuate the value of vehicle recall as a primary air clean-up tool.

Unnecessary and unfair binding of the motorist to the vehicle dealer is not a consequence of a properly administered recall program.

Unlike the warranty, recall provides a true consumer benefit. When a recall order is issued, the consumer is notified that a specific repair job should be done (what) by the dealer (whom) and when. While the cost to vehicle manufacturers of warranty repairs carries a far smaller price tag because of limited car by car exposure, the threat of a model by model recall imposes a far heavier burden, a burden that is not subject to the whims and biases of dealer judges. The costliness of recalls and the accompanying adverse publicity combine to create the strongest possible encouragement of manufacturers to provide the consuming public with vehicle emission control systems that are reliable and durable.

Conclusion:

APAA supports a two year/24,000 mile warranty coupled with a reasonable recall of defective vehicles, rather than the imposition of overbroad and anticompetitive warranties. Under the recall, coupled with a two year warranty, most of the defects will be discovered without grossly distorting marketplace practices to the detriment of consumers and small business. Should inspection and repair data show a high rate of failure for a particular model year or engine family, a recall can be ordered. Because recalls are applicable to entire vehicle lots, it will be possible to repair on en mass, an advantage not available with the limited warranty application. A small number of failures may occur for which consumers will be forced to pay full freight. But if the warranty regulations are aimed at environmental protection rather than pocketbook protection, then the warranty/recall combination we propose is the strategy to pursue.

CATERPILLAR TRACTOR CO.

Peoria, Illinois 61629

December 20, 1983

The Honorable Robert T. Stafford
Chairman
Committee on Environment and Public Works
U.S. Senate
Washington, DC 20510

Dear Mr. Chairman:

Members of the heavy-duty diesel engine industry -- Caterpillar Tractor Co., Cummins Engine Company, and Mack Truck, Inc. -- have a continuing interest in the development of amendments to Title II of the Clean Air Act.

We have been supportive of your Committee's efforts to adopt a more workable approach to emissions control as embodied in the provisions of S. 768.

On behalf of our companies I request that the attached "Comments on S. 768" be included in the Committee hearing record of November 15, 1983.

Sincerely,

John J. McNally
Manager
Product Safety and
Environmental Control

Telephone: (309) 675-5282
bt/3343P

Enc.

Heavy-Duty Diesel Engine Industry
Comments on S. 768
Clean Air Act Amendments of 1983

The Senate Committee on Environment and Public Works is now considering S. 768 which contains a number of amendments to the Clean Air Act relating to the heavy-duty provisions in Title II. The heavy-duty diesel engine industry participated in the development of these amendments when adopted by the Committee during the 97th Congress as part of S. 3041.

The heavy-duty diesel industry is supportive of the Committee's efforts to adopt a more workable approach to the control of heavy-duty emissions as reflected in the amendments contained in S. 768. On the other hand, the heavy-duty diesel industry recommends that the Committee give consideration to additional revisions to the lead time and standard setting provisions relating to heavy-duty engines and vehicles.

Background

Since the passage of the 1977 Clean Air Act Amendments, the complexity of regulating heavy-duty diesel emissions has been more widely appreciated. The difficulty of controlling both diesel NO_X and particulates has been recognized by the EPA and the scientific community. The National Research Council of the National Academy of Sciences and the Environmental Protection Agency have both acknowledged that the percent reduction in the 1977 Amendments for heavy-duty NO_X is not feasible for heavy-duty diesel engines. The National Research Council also concluded in 1981 that reductions in NO_X from heavy-duty diesels will result in significant increases in particulates and hydrocarbons. The continued regulation of each heavy-duty pollutant in isolation would be inconsistent with current scientific knowledge and good engineering practice.

Several of the heavy-duty amendments contained in S. 768 begin to address these concerns and attempt to reduce the significant uncertainty and cost associated with the present approach. Further changes are needed, however, to establish a standard setting process that: (1) provides adequate lead time for the manufacturers to develop the requisite control technology in an efficient and cost-effective manner; (2) allows for the consideration of the significant trade-offs present in the control of heavy-duty diesel emissions; (3) recognizes the inherent differences between heavy-duty diesel and gasoline engines and the technologies to control specific pollutants; and (4) allows consideration of scientific data related to health effects of various pollutants and the appropriateness of standards in light of this data.

Lead Time

While S. 768 specifies that heavy-duty particulate standards shall take effect four years after promulgation, it makes no provision for a definite lead time period for NO_X standards promulgated under general standards setting authority. It is uncertain whether four-year lead time will be provided when NO_X and particulate standards are promulgated in the near future. The need to clarify this issue is essential to the long-term planning requirements of the industry. The more stringent standards will require significant emission reductions from heavy-duty diesels which can only be achieved by major engine changes which may also require truck changes as well. Such changes are part of a sequential program that must start with a concept and end with a product acceptable to the ultimate user. The time between these end points must include design, development, durability, and reliability testing, customer acceptance tests, and the procurement of new machine tooling.

Industry must have a minimum four year lead time to develop engineering concepts and introduce into the marketplace products with reliable and durable control technology. A four year lead time for more stringent standards is necessary to avoid the high risks and efficiencies caused by working toward unrealistic deadlines.

Consideration of the Level of Other Pollutants

S. 768 requires the EPA Administrator, when setting a new standard or revising an existing one, to consider the effects of that standard on the manufacturer's ability to achieve existing or proposed standards for another pollutant. This requirement will insure that the control of one pollutant does not result in an unreasonable increase in the level of other pollutants. It addresses the industry's concern, acknowledged by the National Academy of Sciences, that efforts to reduce NO_X will result in significant increases in both particulates and hydrocarbons.

S. 768 also authorizes the EPA to set NO_X and particulates standards which take effect in the same model year. As noted above, more stringent control of NO_X can have a pronounced impact on the level of particulates from heavy-duty diesels. It is thus desirable to have the EPA set these two standards simultaneously. In doing so, the EPA will have to consider the trade-offs in engine design, performance and emission levels. This requirement will also help minimize back-to-back recertification of the same engine which is necessary when two standards for different pollutants are effective in different years.

Independent Technology Assessment

S. 768 authorizes the EPA Administrator to make appropriate arrangements with the National Academy of Sciences to study and report on the technical feasibility of any proposed heavy-duty particulate standards. Since the EPA has not previously promulgated a heavy-duty diesel particulate standard, it is especially important and a practical necessity that the Agency have adequate information from which to reliably project the level of control for which technology will be available. An independent assessment by the National Academy of Sciences can greatly assist the EPA by insuring that the best technical and engineering information is brought to bear on this situation. In making the study arrangements with the NAS, the EPA Administrator can, in order to avoid any undue delay, stipulate time deadlines for completion of the report.

Standard Setting

The greatest anomaly in the 1977 Clean Air Act Amendments is the use of a gasoline-engine baseline in determining required percent emissions reductions for heavy duty diesel engines. This requirement is particularly troublesome in the case of NO_X emissions. The Senate Committee on Environment and Public Works acknowledged in its report on S. 3041 that basing heavy-duty diesel NO_X standards on a baseline derived from the emissions of uncontrolled gasoline engines, which emit significantly less NO_X than do diesel engines, would require heavy-duty diesels to reduce NO_X emissions from 83 to 92 percent (not 75 percent as mandated by the 1977 amendments to the Clean Air Act) from their uncontrolled levels. Moreover, since there are stark differences in control technologies, fuel economy trade-offs and particulate emissions between heavy-duty gasoline and diesel engines, the use of a common gasoline baseline as is presently required in setting heavy-duty emission standards, is not rational.

Since heavy-duty diesel engines have more difficulty in controlling NO_X emissions than do gasoline engines, the common gasoline baseline has created unachievable goals for the heavy-duty diesel industry. These unrealistic goals are counterproductive to the orderly development of control technology. While the EPA has recognized that the statutory requirements are not feasible, the current law mandates that these unattainable percentage reductions be pursued. A more pragmatic approach that provides a workable standard setting process is needed.

Of equal concern is the fact that the percent reductions did not originate from any consideration of available control technology, health effects information, or costs. In fact, the 1981 National Academy of Sciences study quoted in the Senate Committee Report on S. 3041 found that there was no evidence that heavy-duty diesel engines could meet the 75 percent reduction requirement by 1986, one year after the standard is required to take effect. The percent reduction requirement also ignores the critical fact that more stringent control of NO_X from heavy-duty diesel engines in isolation results in significant increases in both particulate and hydrocarbon emissions from these engines. Thus it is imperative that the EPA set heavy-duty standards that take these factors into account.

The heavy-duty diesel engine industry urges the Committee to adopt standards setting procedures which establish a process allowing the EPA to deal with many of the trade-offs described above. These procedures would require the EPA to first consider the health effects of each of the pollutants from heavy-duty engines in relation to the National Ambient Air Quality Standards. Heavy-duty emission standards must be "reasonably achievable," that is, they must be feasible without having a disproportionate impact on cost, fuel economy or level of other heavy-duty emissions. Most importantly, EPA must also demonstrate that the technology for meeting the standards will be available at the time the standards are to be applied. This does not mean that the standards will be limited by technology in actual routine use; rather, it requires the EPA to make a reasonable and informed projection that the requisite technology will be available at the time the standards are to take effect.

Conclusion

We support the Committee's efforts to remedy some of the problems faced by the heavy-duty diesel industry as a result of the existing 1977 Clean Air Act and recommend that the Committee, in its upcoming deliberations, consider further changes to the lead time and standard setting provisions. These changes will eliminate much of the uncertainty that presently exists and will help to assure the continued competitive viability of the heavy-duty diesel industry.

December 20, 1983
Caterpillar Tractor Co.
Cummins Engine Company
Mack Truck, Inc.

League of Women Voters of Beaumont
845 Edson
Beaumont, TX 77706
November 16, 1983

Senator Lloyd Bentsen
Hart Senate Office Building
Washington, DC 20510

Dear Senator Bentsen:

The League of Women Voters of Beaumont would like to go on the record of the public hearings of the Environment and Public Works Committee on the Clean Air Act. We are in favor of the reauthorization of a stronger Clean Air Act. We are most concerned about toxic air pollutants which are not yet under control. Toxic rain is of particular interest to the League of Women Voters, and the Beaumont League feels that the time has come for Congress to control acid rain and air pollutants.

Based on studies by the National Academy of Sciences and the Interagency Task Force for the White House Office of Science and Technology, we are convinced that action must be taken immediately. Acid rain threatens our crops, our forests, our lakes, our man-made structures, and, in fact, our health. We are concerned about the leaching of toxic metals from the ground and from pipes which get into our drinking water supplies. We know that the effects of acid rain do not disappear.

We must act to reduce emissions. Specifically the League supports the reduction of emissions in the eastern U.S. by 12 million tons (50%) as proposed in S 769. However, we feel that the 15 year time span for reduction allowed in S 769 is far too long to wait. We recommend a ten year program for reduction and control of acid rain.

In addition the League believes Congress should require the E.P.A. to set up technology-based standards for existing and new industrial sources of pollution. We are opposed to any exemptions that would give smelters a ten year period of release from pollution control requirements. We would also like to see Congress direct the E.P.A. to make a decision on whether or not the 37 chemicals that have been under investigation for over five years are hazardous pollutants. Deadlines must be established for hazardous designation within the next 5 years. We also support an amendment to the Clean Air Act that would protect new national parks, wildlife refuges, and wilderness areas that have been established since the 1977 passage of the Act.

Some of us in Texas have had the mistaken notion that acid rain was a problem that belonged to the northern tier of states. Recent reports from the Texas Energy and Natural Resources Advisory Council and the Texas Air Control Board have shown that acid rain is a problem in Texas, too. For example, in the Houston-Galveston area precipitation has been tested at being almost 400 times as acidic as natural rain. Some data have indicated that our sensitive areas in northeast Texas have received rain with very high acidity. In our city, Beaumont, the acidity levels in rain were more than 5 times the normal level in 1980; in Tyler acidity levels were 20 times greater than natural rain.

The soil and vegetation of our Texas forests and agricultural lands will begin to feel the effects of this acid rain. The Texas Energy and Resource Advisory Council predicts long-term adverse agricultural effects; native vegetation in west Texas could also suffer damage from an increase in acid rain. Many native Texas trees are especially sensitive to acid decomposition (the black willow, alder, water oak pines, birch, American elm, and catalpa, to name a few).

The Beaumont League of Women Voters is very concerned about the effects of acid rain on Texas and the nation as a whole. We join with our national organization in urging that you and your committee work to reauthorize and strengthen the Clean Air Act.

Sincerely,

Mitzi Vorachek
Program Vice President

NATIONAL WILDLIFE FEDERATION
1412 Sixteenth Street, N.W., Washington, D.C. 20036 202—797-6800

November 17, 1983

SCIENTISTS' ACID DEPOSITION SURVEY

Jay D. Hair
Executive Vice President

Kenneth S. Kamlet, Director
Pollution & Toxic Substances
Division

SCIENTISTS' ACID DEPOSITION SURVEY

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Scientists' Acid Deposition Survey: Principal Findings

1. Scientists, by a 7-to-1 margin, favored some form of acid precipitation control program over putting off further controls pending the results of more research or monitoring (Question 1).

2. Nearly two-thirds of all scientists responding favored a control program aimed at protecting all sensitive areas of the eastern half of the country. They favored this approach over controls geared only toward heavily impacted areas of the northeast by a margin of nearly 3-to-1. (Question 1).

3. Scientists were significantly more supportive of sulfur dioxide controls in the range of 5 to 12 million tons a year than of lesser controls and of broad reductions throughout all or most of the eastern 31 states than they were of targetted reductions in only a few source states (by a more than 5-to-1 margin). The control option receiving maximum support (64%) was a 10-12 million ton reduction in sulfur dioxide emissions throughout the 31 eastern states, plus reductions in eastern Canada. (Question 2).

4. By a 6-to-1 margin, scientists supported the need to offset new sulfur dioxide emission sources by corresponding further reductions in existing emissions--so that emissions growth does not diminish gains achieved by placing controls on existing sources. (Question 3).

5. Four out of five scientists considered the risk of irreversible natural resource damage due to acid precipitation to be sufficiently great as to necessitate immediate and decisive steps to curtail the emissions that cause acid rain. (Question 4).

6. By better than 7-to-1, scientists rejected the logic of evaluating a sulfur dioxide-based acid rain control program on the basis of all emission reduction costs, while considering only those SO_2 reduction benefits associated with acid rain. (Question 5).

7. Scientists agreed by nearly 4-to-1 that it is appropriate to emphasize controls on SO_2 emissions, where we know they will do the most good, with significant new controls on nitrogen oxide emission sources being deferred for later consideration. (Question 6).

8. Of the six EPA scientists responding, all but 2 supported a control program significantly stronger than that advocated by their boss, EPA Administrator Ruckelshaus (p. 13).

ABOUT THE SURVEY

Written questionnaires (Appendix I) were sent to 461 U.S. acid precipitation researchers listed in the *International Directory of Acid Precipitation Researchers*, Interim Edition (October, 1980). This directory was compiled by The Institute of Ecology and North Carolina State University under a cooperative agreement between the U. S. Environmental Protection Agency and North Carolina State University. Although the directory also includes some 170 Canadian acid precipitation researchers, we chose not to send questionnaires to these scientists, primarily because the questionnaire was designed to address the acid rain problem and potential solutions in the context of the United States.

The questionnaires were mailed out on September 16 and 19, 1983, and responses received through late October were included in the tabulation of responses. Twelve questionnaires were returned by the Post Office as undeliverable, but selective efforts to contact a broad range of researchers listed in the Directory by telephone yielded a great many more that were no longer at the listed address. The 96 responses received and included in the survey tabulation probably represent at least 25 percent of the questionnaires actually received by the scientists to whom they were mailed.

A limited effort was made in the midst of the survey period to enhance the rate of response by telephoning a number of addressees and encouraging them to complete and return their questionnaires. (To minimize bias, we called scientists located neither in the Midwest nor in the Northeast). About three dozen scientists were contacted in this fashion. Ten or 12 indicated they had not received a questionnaire in the mail, and new ones were sent to them.

Clearly, some degree of self-selection occurred on the part of questionnaire recipients who elected to respond or not to do so. There is no reason to believe, however, that scientists supporting strong acid rain controls were inherently more likely to respond than those opposing such controls. For example, 20 respondents were government employees (and, therefore, perhaps more inclined to support the current U. S. Government position of more-research, no-action on acid rain). Many other respondents were readily identifiable as industry-employed scientists, employees of government-oriented consulting firms, and scientists at government-supported research laboratories. We attempted to minimize institutional biases by extending all respondents the option of anonymity and/or confidentiality. Nearly half of those responding invoked this option. However, institutional bias (in both directions) undoubtedly remained to some degree.

Toward the end of the survey period, we sought to gauge the extent of the self-selection that had occurred through the written survey process by telephoning a strictly random subset of our sample of 461 Directory-listed scientists, and seeking their oral response to one of the six questions included in the written survey. Oral responses were ultimately obtained from 38 scientists, although a much larger number of calls had to be made to secure this level of response.

One thing was apparent from this "validation" effort: some degree of self-selection had indeed occurred on the part of the written respondents, with those not responding apparently being constitutionally or philosophically less willing to address the policy implications of scientific and technical data than those who had voluntarily returned completed questionnaires. (This may also explain the high proportion of government scientists among the questionnaire respondents.) Of the 38 scientists polled by telephone, at least 6 flatly refused to venture an opinion on the policy implications of acid rain research. Another 10, while willing to respond, would not choose any of the 5 policy options presented, but opted in favor of the "none of the above" response--31% of those responding, compared to only 16% for those submitting written questionnaires. It was perhaps unfortunate that the question used in this validation effort was Question 2, one of the more policy-oriented questions on the entire questionnaire. (The results of the telephone survey are discussed more fully later in this report.)

CONTEXT OF THE SURVEY

This survey was initiated in the aftermath of the widely publicized National Academy of Sciences report, Acid Deposition: Atmospheric Processes in Eastern North America, released on June 29, 1983. It was conducted in the expectation that the Reagan Administration would be announcing its own policy position by mid-October. And it was carried out against the back-drop of more or less active congressional initiatives on acid rain. (The most prominent of these are the Sikorski/Waxman bill, H.R. 3400, in the House, and the Stafford (S. 768), Mitchell (S. 145), and Stafford/Hart (S. 769) bills in the Senate.) These bills generally would provide for an 8 to 12 million ton annual reduction in sulfur dioxide emissions, limited to or concentrated in the eastern half of the United States, and implemented over a period of 10 to 15 years.

In late October, EPA Administrator William Ruckelshaus announced at an Ottawa press conference that disagreements within the Reagan cabinet made it unlikely that an Administration policy on acid rain would be announced anytime soon. More recently there have been signs of stepped-up activity at the congressional committee level, with indications that active committee consideration of acid rain and other Clean Air Act issues may occur as early as February, 1984.

Mr. Ruckelshaus summed up the situation well in an October 26th speech, when he observed that, "if acid rain controls were cheap, there wouldn't be any disagreement on the science." Unfortunately, coming to grips with the acid rain problem is a multi-billion dollar proposition. This has resulted in a lot of attention being directed at the scientific underpinnings of an acid rain control program.

The National Wildlife Federation designed and conducted its survey of acid precipitation scientists in an effort to obtain the perspective of the scientific community on the technical aspects of the acid rain issue that bear on the ongoing public policy debate.

RELATIONSHIP TO NWF'S 1982 SCIENTISTS' SURVEY

In late May of 1982, NWF mailed a proposed "Position Statement on Acid Deposition" (Appendix II) to the same group of acid precipitation scientists addressed by the present survey. Unlike the present survey, we did not probe the intricacies of the sub-issues now being focussed upon in the public policy arena. We simply asked the experts if they could endorse the proposed statement. An overwhelming nine out of ten of them did so. (In all, 104 endorsements were received.)

The Position Statement endorsed by these scientists can be summed up by these excerpts from its concluding paragraphs:

> "...[A] plausible acid rain control strategy should seek to begin reducing emissions of sulfur and nitrogen oxides--especially in the eastern U. S. where most sources and receptors are concentrated--by an amount on the order of 50 percent..."
>
> "Although gaps remain in our knowledge of acid precipitation and further research is needed to fill these gaps, we...believe that what is already known about acid deposition justifies and requires immediate legislative steps to begin abating sulfur and nitrogen oxide emissions, particularly in the eastern half of the United States."

The most closely comparable question in the present survey is probably Question 1. Of the 92 scientists willing to choose a specific response to this question, all but 11 agreed (88%) that some form of acid rain controls was warranted, and nearly two-thirds (64%) said that a control program should be geared toward reducing precipitation acidity below recommended target levels throughout the sensitive areas of the eastern U. S.

SURVEY RESULTS

(For the complete questionnaire text, see Appendix I).

QUESTION 1

Principal focus and objective of a national acidic deposition control program:

a. Reduce precipitation acidity below recommended target levels throughout the sensitive areas of the eastern U. S.	59
b. Controls only on emission sources directly affecting heavily impacted areas of the northeast.	10
c. No further controls pending the results of more research and/or monitoring.	11
d. Controls geared to the northeast only, but expanded monitoring throughout the eastern U.S.	12
e. None of the above.	5

Typical Comments

"The objective should be protection of all sensitive areas in North America, not limited to the Eastern U.S."

"The sooner the better. Delay and/or dilution of the process only costs more in the long-run."

"Satellite photos of the 'continental haze' show that the atmosphere compartment mixes inputs from sources over the entire east and center of the continent."

"A site-selective control program would be more difficult to justify than control over a broader area despite the increased costs of the latter."

"Target rates of 20 kilograms per hectare (18 pounds per acre) per year are still too high for some receptors."

Analysis

Ninety-two of the 97 scientists responding to this question selected one of the four options specified. Of these, 81 (88%) favored some form of acid precipitation control program over putting off further controls. Awaiting the results of further research or monitoring--the position advocated by Office of Management and Budget Director, David Stockman, and others in the Reagan Cabinet--

was supported by only one-in-eight respondents (11 out of 92). Of the 5 respondents who selected the "none of the above" option, 3 favored some degree of acid rain control, while 2 did not support the need for controls.

The approach which received by far the greatest support from responding scientists was a control program aimed at protecting all sensitive areas of the eastern half of the country. Nearly two-thirds of all scientists responding (59 of 97) favored this option. They favored this approach over controls geared only toward heavily impacted areas of the northeast--the approach reportedly favored by EPA Administrator Ruckelshaus--by a margin of nearly 3-to-1 (59 versus 22).

QUESTION 2

Most Supportable SO_2 emission control program:

a. A 10-12 million ton reduction throughout the 31 eastern states plus eastern Canada.	52
b. a 6-8 million ton reduction in 21 states only, plus eastern Canada.	10
c. A 3-4 million ton reduction only in a few source states closest to the Northeast.	12
d. A less than 10 million ton reduction, but throughout the 31 eastern states.	6
e. A less than 3 million ton targeted reduction.	1
f. None of the above.	16

Typical Comments

"My research suggests that a target loading of 20 kg sulfate per hectare per year will not bring the pH up to 4.6. Probably the target should be 15 kg/ha/yr."

"It is probably more important to get started than to worry about which states to include."

"Apportionment of cutbacks among SO_2 emitters should be even-handed across the entire airshed."

"Sulfates remain in the air for days and even weeks. Sources downwind of sensitive areas may be important when the air returns on its next trip."

"A cap on a pounds per Btu basis should be set which achieves 50% reduction throughout the Eastern U.S."

"This is a nationwide problem."

Analysis

The scientists who responded were significantly more supportive of sulfur dioxide controls in the range of 5 to 12 million tons a year than of lesser controls and of broad reductions throughout all or most of the eastern 31 states than they were of targetted reductions in only a few source states. Specifically, 68 of the 81 respondents who selected a specific option took this position--a more than 5-to-1 margin in favor of high- to intermediate-level controls over lower-level controls. Of the 16 respondents who chose the "none of the above" response, 7 indicated support for controls, while 9 appeared to oppose control measures.

The control option receiving maximum support (64%--52 of 81) was a 10-12 million ton reduction in sulfur dioxide emissions throughout the 31 eastern states plus reductions in eastern Canada.

Telephone Validation Effort

Using a computer-generated sequence of numbers, we telephoned a random sampling of scientists on the master Directory list of 461 scientists to see how their oral responses to Question 2 compared with the self-selected sample of 97 scientists who mailed back completed questionnaires.

Of 38 scientists successfully contacted, 6 were unwilling to take any position, so were excluded from further consideration in this analysis. The responses of the other 32, juxtaposed with the responses received on the written questionnaires, are tabulated below:

	Telephone Sample	Questionnaire Respondents
Answer Selected	Number of Respondents (%)	Number of Respondents (%)
a	10 (31%)	52 (54%)
b	1 (3%)	10 (10%)
c	4 (13%)	12 (12%)
d	3 (9%)	6 (6%)
e	4 (13%)	1 (1%)
f	10 (31%)	16 (16%)

Statistical comparison of these results confirms what is obvious from casual inspection: namely, that the results are significantly different. (Despite these differences, the standard deviations--i.e., the error ranges inherent in each answer--overlap for the two sets of responses.)

One of the more striking differences in the two sets of responses was the much larger percentage of respondents in the telephone survey who were unwilling to choose one of the specific answer choices (i.e., 31% versus 16%). This fact, coupled with the fact that 16% of the scientists contacted by phone refused to respond at all, suggests that the sample of 97 scientists who submitted written responses represent a self-selected subset of acid deposition researchers which is willing to confront the policy implications of their scientific research. Since socially-responsible scientists (on both sides of the acid rain question) of this kind are the ones most likely to influence the public policy debate on acid rain, it would seem appropriate to compare the two sets of responses based solely on those scientists who selected specific response options.

A comparison on this basis is presented below:

Answer Selected	Number of Respondents (%)	Number of Respondents (%)
a	10 (45%)	52 (64%)
b	1 (5%)	10 (12%)
c	4 (18%)	12 (15%)
d	3 (14%)	6 (7%)
e	4 (18%)	1 (1%)

Although the telephone results still diverge from the written responses, the basic patterns are similar. For example, whereas, the written respondents favored intermediate- to high-level acid rain controls by a 5-to-1 margin, the ratio for phone respondents was still nearly 2-to-1 (14 versus 8).

One thing is clear. Although the one-quarter of U.S. acid deposition scientists who responded to NWF's questionnaire may not be fully representative of the silent majority that did not respond, they do at least represent themselves and constitute a sizeable body of respectable scientific opinion.

QUESTION 3

Need to offset new SO_2 emission sources by corresponding further reductions in existing emissions:

a. Yes.	60
b. No.	10
c. Other.	24
No response.	3

Typical Comments

"Otherwise we'd be making negative progress."

"Without offsets, future roll-backs become increasingly difficult."

"It makes no sense to reduce emissions now only to allow an increase in the future."

"Full offset is an ideal situation. Any new source should be required to remove at least 95% of the SO_2 from their emissions."

Analysis

The question was perhaps a bit misleading in suggesting that the only two choices to control new growth are universal offsets from existing sources and no curbs on emissions growth. The large number of respondents who chose "other" over the "yes" or "no" answers is probably a reflection of this question's simplistic all-or-nothing dichotomy.

In any case, of those choosing either of the polar options, a 6-to-1 majority supported the need to offset new sulfur dioxide emission sources by corresponding further reductions in existing emissions. Of those choosing the "other" response, at least half clearly favored some means of capping emissions growth (albeit taking the view that approaches other than a rigid offset policy were to be preferred).

QUESTION 4

Risk of irreversible natural resource damage and need to take immediate and decisive steps to stem acid-forming emissions:

a. Yes.	55
b. No.	15
c. Other.	26
No response.	1

Typical Comments

"Doubters are those with a vested interest in doubting."

"Acid rain is a significant cause of accelerated environmental degradation in the U.S. Control is not a 'matter of prudence,' but an essential component of soil, water, and wetland conservation."

"It's time to get going with cleaning up the mess created by the air pollution control 'specialists' of the 60's and 70's."

"The loss of genetic identity and diversity is certainly irreversible. Since we are still ignorant of its complexity, we are certainly in no position to restore it."

"Every non-dunderhead politician in Washington will agree with 'a' and in the same breath ask who's going to foot the bill."

Analysis

Four out of five of the 70 scientists taking a specific (yes or no) position on this question considered the risk of irreversible natural resource damage due to acid precipitation to be great enough to necessitate immediate and decisive steps to reduce acid rain-forming emissions.

Most of the 26 scientists who responded in the "other" category agreed at least in part.

QUESTION 5

Need to consider full range of benefits associated with reducing sulfur dioxide emissions:

a. All benefits should be considered.	74
b. Only acid deposition reduction benefits should be considered.	11
c. Only some SO_2 reduction benefits should be considered in addition to acid deposition reduction benefits.	5
No response.	7

Typical Comments

"When you reduce SO_2 emissions you get all the benefits not just part of them."

"An extremely important point."

"Economic cost due to materials damage by SO_2 and NO_x has been greatly underestimated and needs far more attention than it has been given."

"It is obvious to most thoughtful persons that the full cost of reduction should be compared to the full value received by sulfate reduction!"

"If you accept limits, you open the door to political debates rather than rational debates."

"All benefits are considered when evaluating other air pollutants (e.g., ozone)."

"It is dumb not to consider known benefits."

"All benefits should be considered. This should be obvious!"

Analysis

Only 11 of the 90 scientists responding to this question were willing to accept the logic of EPA's contention that only acid rain reduction benefits should be considered in evaluating SO_2 reduction-oriented acid rain control program. By a better than 7-to-1 margin, the scientists agreed that all quantifiable emission reduction benefits should be weighed against the costs of emission controls.

QUESTION 6

Appropriateness of emphasizing controls in SO_2, with NO_x sources deferred for later consideration:

a. Yes, we need to begin expeditiously where we know controls will do the most good.	68
b. No, we need to deal with all major sources of acidification simultaneously.	19
c. Other.	9
No response.	1

Typical Comments

"Reductions of SO_2-based acidity may clarify the chemistry of NO_x-based pollutants in the atmosphere."

"Research on better methods for NO_x removal should be expedited."

"NO_x may be of greatest importance in causing a pulse of acid during snowmelt. This effect may be very important and may require NO_x controls in some areas."

"SO_2 results from a contaminant in the fuel. NO_2 is an almost unavoidable product of an efficient combustion process."

"But we need to be keenly aware of the NO_x effects and to attach [NO_x controls] when technology permits."

"Let's aim for what we can control now and continue technological studies on NO_x."

"A strong argument can be made for NO_x reduction on the Pacific Coast or extreme western states."

"The rationale for NO_x control should include its role in formation of photochemical oxidants."

Analysis

By a nearly 4-to-1 margin, the responding scientists agreed that it is appropriate to emphasize controls on SO_2 emissions, where we know they will do the most good, with significant new controls on nitrogen oxide emission sources being deferred for later consideration. There was not the sense that NO_x emissions were not deserving of a major control effort; only that, as a practical matter, it made sense to concentrate on reducing SO_2 emissions in the eastern half of the United States.

Profile of Scientists Responding to the Survey

The 97 questionnaires returned during the survey period included responses from 35 of the 50 states. The largest number of responses were received from North Carolina (10), Minnesota (8), New York (7), and Virginia and California (6 each).

Twenty respondents identified themselves as U. S. Government employees, broken down by agency as follows:

Environmental Protection Agency -- 6
U. S. Department of the Interior (USGS, USFWS, BLM) -- 8
U. S. Department of Agriculture (USFS) -- 5
Smithsonian Institution -- 1

A much higher proportion of governmental respondents asked that their responses be treated as confidential (13 out of 19--68%) than was true for the non-governmental respondents (29 out of 76--38%). On an individual agency basis, confidentiality was requested most frequently by Interior Department personnel (7 out of 8--88%), followed by EPA employees (5 out of 6--83%), and then by Agriculture Department scientists (1 out of 4--25%). One could speculate that these statistics are related to the politicization of the Interior Department under James Watt, the aftermath of a similar situation at EPA under Anne Burford, and a much lower sensitivity of this kind at USDA.

A comparison of the governmental scientist responses to the first two questionnaire questions with those of the respondents as a whole is instructive.

On question 1, governmental scientists favored acid rain controls over the more-research-no-action stance by a margin of 19:1 (18 out of 19). For the respondents overall, the margin was 7-to-1. Controls aimed at protecting all sensitive areas in the eastern half of the country were favored over controls geared only toward heavily impacted areas of the northeast by a 2-to-1 margin, compared to nearly 3-to-1 for all respondents.

On question 2, governmental scientists favored high- or intermediate-level acid rain controls and broad regional coverage, over more modest controls targetted at only a few source states by roughly the same 5-to-1 margin as all respondents. The control option receiving maximum support was again a 10- to 12-million ton reduction in sulfur dioxide emissions throughout the eastern 31 states (plus reductions in Canada)--supported by 71% of the governmental respondents compared to 64% of all respondents.

Interestingly, of the 6 EPA scientists responding, all but 2 supported a control program significantly stronger than that advocated by their boss, EPA Administrator Bill Ruckelshaus.

APPENDIX I

NATIONAL WILDLIFE FEDERATION
1412 Sixteenth Street, N.W., Washington, D.C. 20036 202—797-6800

September 16, 1983

Dear Acid Deposition Expert:

As you know, some major decisions are about to be made by the Administration and the Congress as to how this country should deal with the problem of acid deposition in the years ahead. Among the key issues that will be addressed are whether:

--emission controls should encompass the whole eastern half of the country, or whether the control region should be smaller (or larger);

--emission controls should emphasize sulfur dioxide emissions, or whether a major effort should also be made to deal with nitrogen oxides;

--the goal of sulfur oxide emission controls should be a 50% reduction in deposition in sensitive areas or some lesser level of reduction;

--emission reduction goals should be accomplished expeditiously in one step or should be spread out in phases;

--the benefits of sulfur dioxide emission reductions should be deemed to be limited to acid deposition reductions, or whether associated visibility enhancement, respiratory disease reduction, and diminished materials damage impacts should also weigh into the balance;

--the allocation of emission reduction obligations should emphasize reducing the heaviest emitting sources first or should emphasize reducing emissions in the vicinity of affected areas;

--control requirements should be designed to achieve desired reductions at least-cost, or whether avoidance of localized job dislocations and coal market shifts should be a co-equal priority; and

--the costs of control requirements should be primarily borne by the high-emission sources, or whether the costs should be shared more uniformly by all generators of electric power.

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100% reclaimed paper

Because the choices made on these and other acid deposition issues have major economic and environmental implications, we all have a stake in ensuring that the decisions made for dealing with acid deposition are scientifically defensible.

We have designed the attached questionnaire to elicit your informed views on a number of these key issues without imposing greatly on your time. We hope you will take just a few moments to complete and return the questionnaire. Since an Administration position may be finalized by the end of this month (with Congressional action to follow this fall and spring), please respond as quickly as possible. We, in turn, will convey your views to the key decisionmakers in the Executive Branch and the Congress.

To ensure that your views are accurately reflected, please feel free to include marginal comments and explanations on the questionnaire form. Similarly, if your early response would be facilitated by conveying comments by telephone, please don't hesitate to call them in to Kenneth Kamlet or his Administrative Aide, Betsy Hodge (call collect, if you wish), at (202)797-2945 or -2946.

Thank you in advance for your cooperation and assistance.

Sincerely,

Jay D. Hair
JAY D. HAIR
Executive Vice President

Kenneth S. Kamlet
Kenneth S. Kamlet, Director
Pollution & Toxic Substances
Division

September 16, 1983

ACID DEPOSITION QUESTIONNAIRE

1. Overwhelming circumstantial evidence indicates that the primary cause of acid precipitation in the eastern United States is fossil fuel emissions of sulfur and nitrogen oxides. Three panels of acid rain specialists have recently concluded that slowing the rate of deterioration of sensitive freshwater ecosystems would require a reduction of 50-percent in deposited hydrogen ions, to pH levels no lower than 4.6 to 4.7 (NAS, 1981), and a possibly even greater reduction in wet sulfate deposition, to levels no higher than 20 kilograms per hectare (kg/ha) of sulfate each year (U.S.-Canada Work Group I, Final Report, 1983), or 0.5 gram sulfur per square meter (g/m^2) per year (Stockholm Conference, Experts' Meeting, 1982). More than two-thirds of the eastern U.S. receives precipitation which (on average) exceeds these deposition targets. A majority of these states also contain poorly buffered soils and low alkalinity waterways (including eastern Maine, western and southern New England, western New York, Adirondacks, Pennsylvania, Appalachian Plateau, and Blue Ridge/Smoky Mountains; other sensitive areas include the Wisconsin/Michigan highlands and northeast Minnesota). Parts of the northeastern U.S. (including parts of Ohio, West Virginia, Pennsylvania, New York, and much of New England) receive average precipitation with sulfate and hydrogen ion loadings that are twice the recommended target levels.

Question: In your judgment, what should be the principal focus and objective of the national acidic deposition control programs now being developed by the Administration and the Congress (select one of the following): (a) sufficient controls on responsible emission sources to reduce sulfate and hydrogen ion levels in precipitation below recommended target levels throughout the sensitive areas of the eastern U.S.; (b) controls only on emission sources directly affecting the highest-deposition and most-sensitive areas of the northeast; (c) no further controls until source and receptor relationships are better understood, or until more complete monitoring data are available; (d) controls geared to the northeast only, but expanded monitoring of emissions and deposition throughout the eastern U.S.; (e) none of the above (explain below). Answer: ___(insert letter). Comments (optional): ______________

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____.

2. A recent National Academy of Sciences report (1983) indicates that a 50% reduction in long-term average SO_2 emissions in eastern North America (if distributed uniformly) would be expected to produce a similar reduction in sulfate deposition in this region. Such a reduction would be expected to cut the region receiving pH 4.6 rain (and subject to deterioration of lakes) to about one quarter of its original size. Although SO_2 emissions and emission reduction opportunities are not distributed uniformly through eastern North America (half of the total emissions are concentrated in 7 midwestern states: Illinois, Indiana, Kentucky, Missouri, Ohio, Pennsylvania, and West Virginia), sensitive receptor areas in the East

are largely within 1,000 kilometers (600 mi.) of major emission sources in the Ohio River Basin. The NAS report (1983) indicates that the atmosphere is well-mixed and sources are effectively indistinguishable within a radius of about 1,000-km.

Question: Which of the following SO_2 emission control programs would you consider most supportable: (a) a 40- to 50-percent reduction (10-12 million tons) throughout the 31 eastern states plus eastern Canada; (b) a 40- to 50-percent reduction (6-8 million tons) in 21 states only plus eastern Canada--excluding 8 sensitive states to the south and west and 1 major source state; (c) a 40- to 50-percent reduction (3-4 million tons) only in a few source states closest to the Northeast (e.g., Ohio, Pennsylvania, West Virginia, and New York); (d) a smaller reduction, but throughout the 31 eastern states; (e) a smaller (less than 3-million tons) targetted reduction; (f) none of the above (please explain). Answer: ____(insert letter). Comments (optional): ____________

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3. By the end of the century and beyond, new and expanded sources of SO_2 emissions will erode some of the benefits of an acid deposition control program that does not include a cap on new emissions.

Question: Should an acid deposition control program include a requirement that any new SO_2 emission sources must be offset by corresponding further reductions in existing emissions (to ensure no net increase): (a) yes; (b) no; (c) other (explain). Answer: ____ (insert letter). Comments (optional):____

____

____.

4. U.S. and Canadian experts (U.S.-Canada Work Group I, Final Report, 1983, pp. 3-144 - 3-146) have identified at least 3 potentially irreversible effects of acidic deposition: (a) loss of genetically unique fish stocks; (b) depletion of acid neutralizing capacity of lakes and watersheds; and (c) the loss of soil cations and nutrients which can lead to decreases in soil fertility. The Interim Report of the White House Office of Science and Technology Policy's Acid Rain Peer Review Panel (June 28, 1983) expressed especially great concern over the "grave" prospect that long-term accumulations of acidity may perturb the proper functioning of the denitrifying of microorganisms in unmanaged soils--an effect which the panel regarded as "long-term" or "irreversible." The OSTP Panel concluded that "it is in the nature of the acid deposition problem, that actions have to be taken despite incomplete knowledge." It cautioned that, "if we take the conservative point of view that we must wait until the scientific knowledge is definitive, the accumulated deposition and damaged environment may reach the point of 'irreversibility.'"

Question: Do you agree that the acidic deposition phenomenon poses a significant risk of irreversible natural resource damage, and that immediate and decisive steps must be taken as a matter of prudence, to stem to the extent possible acid-forming emissions? (a) agree; (b) disagree; (c) disagree in part (explain). Answer: _____(insert letter). Comments (optional):____

____

____.

5. As is true of most important societal decisions, action to control acid deposition will involve a number of tradeoffs. A 40-50% reduction in (primarily) power plant emissions of SO_2 will increase the costs of electric power generation by $3 to $5 billion a year and increase eastern utility rates by a few percentage points. (Average rate increases could be reduced by spreading some of the costs to rate-payers and power generators in other parts of the country). There may also be localized dislocations in some areas in markets for high-sulfur coal and loss of high-sulfur coal mining jobs. On the other hand, the impacts of acid deposition on sensitive downwind areas would be significantly reduced. Additional near- and far-field benefits (some of them even more significant in their economic value than acid rain mitigation) would be realized from a reduction in SO_2 emissions. These would include visibility enhancement (through reduction of fine sulfate particles), respiratory disease reduction (through reduction of fine sulfate particles and SO_2), and diminished materials damage impacts (through fine sulfate particles as well as acid deposition). The Administration has apparently taken the position, however, that an acid deposition reduction program, should be justified solely on the basis of direct acid deposition reduction benefits, and that other SO_2 reduction benefits should not weigh into the decision-making equation.

Question: To the extent national acid deposition controls emphasize sulfur dioxide emission reductions, is it appropriate to consider the full cost of such reductions while encompassing only those benefits directly associated with reduced acidic deposition?: (a) all SO_2 reduction benefits should be considered; (b) only acid deposition reduction benefits should be considered; (c) only some SO_2 reduction benefits should be considered in addition to acid deposition reduction benefits (explain). Answer:_______(insert letter). Comments (optional):____

____

____.

6. About one-third of man-induced rainfall acidity in eastern North America is attributable to nitrogen oxide emissions, associated primarily with power plants and automobiles. The technology for achieving large reductions in NO_x emissions is, however, not as well-developed as that for reducing SO_2 emissions. There are those who argue that initial acid deposition controls should emphasize SO_2 emissions for this reason and because: nitrate/nitric acid-related rainfall acidity is much less a long-range transport phenomenon than sulfate/sulfuric acid acidification (because NO_x is more rapidly converted to acid and nitrate) and thus

can be more readily addressed by state air pollution control programs; nitrogen-based acifification can be much more readily assimilated by plant-life than sulfate-based acidification. (On the other hand, biological assimilation is likely to be less important in the winter when biological activity is depressed, which is when high acidity levels accumulate in snow, to exert acute impacts during later snow melts); and one unit of emitted NO_x yields one unit of acidity (hydrogen ions), compared with the two units of acidity formed from each unit of emitted SO_2.

Question: Is it appropriate as the first step in a national acidic deposition program to emphasize controls on SO_2 emissions, with the possibility of encompassing NO_x sources deferred for later consideration?: (a) yes, we need to begin expeditiously where we know controls will do the most good; (b) no, we need to deal with all major sources of acidification simultaneously; (c) other (explain). Answer: ____(insert letter). Comments (optional): ______________________

____

____.

Name: ____(please type or print)

Affiliation: ____

Telephone No. ________________________

Please keep my responses confidential: Yes ____ No ____

Signature: ______________________________ Date: ________________

Please return completed questionnaire to:

K.S. Kamlet
Toxics Team
National Wildlife Federation
1412 Sixteenth Street, N.W.
Washington, D.C. 20036

Or, call responses in to us at: (202) 797-2945.

APPENDIX II

[redacted]

POSITION STATEMENT ON ACID DEPOSITION

Overwhelming circumstantial evidence indicates that the primary cause of acid precipitation in the eastern United States is fossil fuel emissions of sulfur and nitrogen oxides. As these emission products are transported by wind and air mass movements, they are futher oxidized into acidifying compounds and hydrogen ions before falling back to earth in either wet or dry form.

Acid deposition stresses aquatic ecosystems, particularly poorly buffered ones, and can kill sensitive plant and animal populations, either directly or by creating food web imbalances. In addition, acid precipitation promotes the loss of soil nutrients and cations in a manner which may be irreversible. Leaching of ions from soils can be damaging to both the soil and to aquatic organisms. Acid deposition also destroys man-made materials by accelerating metal corrosion, by blistering painted surfaces, by destroying surface cohesion of sandstone and limestone, and by eroding statues and stone structures.

As has been concluded recently by two panels of acid rain specialists, slowing the rate of deterioration of sensitive freshwater ecosystems would require a reduction of 50 percent in deposited hydrogen ions (i.e., an achievement in precipitation pH levels to no lower than 4.6 to 4.7) (NAS, 1981) and a possibly even greater reduction in wet sulfate deposition (U.S.-Canada Work Group I, 1981). Although uncertainties regarding the kinetics of atmospheric transformation processes make precise predictions impossible, it can be anticipated that a significant reduction in sulfur and nitrogen oxide emissions will produce significant (although perhaps not directly corresponding) reductions in acid deposition.

Accordingly, a plausible acid rain control strategy should seek to begin reducing emissions of sulfur and nitrogen oxides—especially in the eastern U.S. where most sources and receptors are concentrated—by an amount on the order of 50 percent. Since control of sulfur dioxide and nitrogen oxide emissions from new electrical generating plants would be insufficient to accomplish this, restrictions on older plants must be considered.

Although gaps remain in our knowledge of acid precipitation and further research is needed to fill these gaps, we the undersigned scientists believe that what is already known about acid deposition justifies and requires immediate legislative steps to begin abating sulfur and nitrogen oxide emissions, particularly in the eastern half of the United States.

☐ Yes, I am willing to have my name read into the Congressional Record as supporting the Position Statement on Acid Deposition — 10 May 1982.

☐ No, I am not willing to have my name read into the Congressional Record as supporting the Position Statement on Acid Deposition — 10 May 1982.

NAME: ____________________________
ADDRESS: _________________________

Please return to the National Wildlife Federation, 1412 Sixteenth Street, N.W., Washington, D. C. 20036.